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Distinguished artists and their signature sticks - classics that never go out of style.

Steve Gadd
Harvey Mason
18 BILL BRUFORD
Having been on the leading edge for 20 years now, Bill Bruford continues his search for new possibilities for drummers. He discusses his current involvement with electronics and how he applies that to his band, Earthworks.

by Simon Goodwin

24 SIMON WRIGHT
He didn't even know that the band he was auditioning for was one of his favorites: AC/DC. But he got the gig, and is now powering the band with his own flavor of solid, no-frills rock drumming.

by Teri Saccone

28 FOCUS ON ELECTRONICS
This special section explores Electronic Setups, details the ABC's of Sound Reinforcement, and offers a helpful glossary of Basic Electronic Terminology.

by Norman Weinberg and Paul Trust

40 MD DRUM FESTIVAL ’88
Pictorial coverage of our recent festival, featuring Carl Palmer, Harvey Mason, Dennis Chambers, Peter Erskine and Steve Smith & Vital Information.
New Directions

I think it goes without saying that certain aspects of electronics opened up a new frontier for drummers. It also means that we’re now forced to deal with some entirely new concepts, techniques, and terminology. Where we once concerned ourselves primarily with drums, cymbals, and accessories, we’re now also confronted with the potential advantages of triggering, sampling, programming drum machines, MIDI applications, and a host of other sometimes complex matters. We’ve witnessed a revolution in percussion technology over the past six years or so, and MD has made every effort to keep you informed. Hopefully, parts of this issue will shed even more light on the subject, and in the process, further encourage those interested in taking their drumming in new directions.

This issue leads off with a full-length feature interview with Bill Bruford, one of electronic drumming’s true pioneers. Though many fine players have since jumped on the electronic bandwagon, Bill Bruford certainly deserves credit for carving out a path that many have followed.

We’ve also taken an illuminating excerpt from Norman Weinberg’s comprehensive text, The Electronic Drummer, soon to be published by MD. Here you’ll find a wealth of information on how you can build a system, ranging from the very basic to the rather complex—depending on your level of interest and your budget. In addition, Norm has supplied a lot of creative ideas for utilizing the system you select. We’ve also included an electronic music glossary to help familiarize you with some of the terms you’re bound to run into.

For those primarily concerned with miking, mixing, special effects, amplification, and monitoring, The ABC’s Of Sound Reinforcement, by Paul Trust, offers some absorbing insight. This is one article that should help answer a lot of the questions we regularly receive.

Several of our regular column departments also focus in on the subject. For instance, this month’s Machine Shop contains an extensive reference guide designed to help you find just the right drum machine for your needs. Douglas James has some valuable thoughts on triggering, and James Morton brings us his transcription of Def Leppard’s “Pour Some Sugar On Me,” as performed by Rick Allen on his totally electronic setup. Finally, we offer a revealing review of the new Simmons SDX, one of the most incredible items ever to hit the electronic drum market.

We hope this issue succeeds in opening some doors for those interested in pursuing the wide world of electronic drumming. Needless to say, this is an area that offers some astounding creative possibilities, but it definitely does require new ways of thinking about our instrument. If you’re interested in being a part of this relatively new chapter in drumming, you might want to embark on the journey right here and now. Enjoy.
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MD DRUM FESTIVAL ’88
Please excuse the following scattered thoughts; this letter is being composed during my trip home from MD’s Drum Festival ’88 at 65 MPH, and my mind is still reeling. Wow, what a show!

Carl Palmer for president! Not only a great drummer, but a wonderful clinician. Chops with a sense of humor to match. A lot of fun.

Harvey Mason—the epitome of control and good taste. He managed to keep me at the edge of my seat for the entire performance. His drumsticks are truly an extension of his soul.

In order not to create any understatements, no comment on Dennis Chambers. I’m truly at a loss for words for Mr. Erskine. I guess it’s time to practice.... Vital Information was a fitting end to a fine day. If God were a drummer, he’d play the entire performance.

In the October issue was the article, “Inside UFIP.” Other great articles that I remember dealt with medicine, ergonomics, relationships, and the power of visualization. These are the kinds of things I hope to continue reading about. Many times, I’ll learn about something I hadn’t even thought of before.

But there are some things I would like to see covered. Particularly, I’d like to see more on the history of drumming in different countries, technical explanations and drawings of drums of all kinds (how they’re made and what aspects contribute to the drum’s sound), and much more on the care and feeding (maintenance) of drums and drum hardware (as well as the continuing product reviews). In the people department, I would like to see more portraits and interviews of beginning and non-professional drummers.

I have enjoyed the magazine even more since it merged with Modern Percussionist. I have not studied percussion, and therefore do not understand all the articles and the charts printed—yet I am able to learn a few things from being exposed to them. It also seems to me that there are a few more women in the field of percussion than in the straight drumkit area. This is a welcome relief. However, as a woman drummer, I am extremely skeptical that there are as few women involved in any aspect of drumming as it appears from reading MD.

There is one woman percussionist featured in the October issue, and this is a rare occurrence.

When I first started subscribing to MD, I was quite put off at how the entire field seems to be unaware that women drummers exist. And I do not doubt that some women who may have aspired to being drummers have not pursued the idea, in part because of this prejudice against them. MD’s position may be, “It’s not our fault there are so few women drummers.” Yet, in a way, it is. As a major drumming publication, MD should be searching these people out and giving a message to women that the field is open to them. Just as Americans can learn much from studying the drumming of other cultures, men can also, I am certain, learn a great deal from the unique perspectives that women drummers have.

Graphically, MD is one of the best publications around. One thing I really like is the “color theme” employed each month. Having one main color for headings and using different combinations of colors for foreground and background on the articles gives a very pleasant variety. And the proportion of pictures to text is just about right. I might like to see a few more close-up shots of drummers playing. I also like the quotes extracted from the articles. And the charts printed as “sidebars” to feature articles, as well as those in Rock Charts, Drum Soloist, etc., are extremely useful.

I am happy to see articles dealing with the electronic side of drumming. However, I would not wish much more of your space to be devoted to it than already is. As it stands, there is a nice balance between electronics and acoustics. Finally, the MD Equipment Annual is an invaluable tool.

Joseph Drennan
Burlington VT

I would just like to say how much I enjoyed MD’s Drum Festival ’88. It was a pleasure to be there, and I’m looking forward to next year’s event.

Tyler Penn
Far Hills NJ

ESSENTIAL INPUT
I am writing in direct response to Ron Spagnardi’s “Essential Input” column in the October issue of MD. I do not usually write letters to editors, but since Mr. Spagnardi made such a convincing argument, I decided to make an exception.

First, I’ll tell you what I do like about MD. I subscribe to a number of magazines, musical and other, and I can honestly say that Modern Drummer is the only one that I consistently read cover to cover every month. If this publication were to stop for some reason, something would definitely be missing in my life.

To be more specific, I particularly like all the short columns that appear regularly, such as Teachers’ Forum, The Jobbing Drummer, Concepts, and Club Scene. The interviews and various portraits of particular drummers are also very insightful and informative. One of the things I like most about this publication is its diversity. As an example, in the October issue was the article, “Inside UFIP.” Other great articles that I remember dealt with medicine, ergonomics, relationships, and the power of visualization. These are the kinds of things I hope to continue reading about. Many times, I’ll learn about something I hadn’t even thought of before.

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Shannon Wahler-Edwards
Olympia WA

continued on page 118
They're stripped down. They're lean and mean. They're the drummer's own set of compact discs. They're PureCussion Drums. PureCussion doesn't have shells. It's a set of heads suspended by our famous RIMS® Drum Mounts. Almost all the top players are attached to RIMS — a patented mounting system that allows the head maximum resonance. With RIMS, PureCussion Drums play, respond, and resonate like traditional acoustic drums. But sound might be the only thing traditional about this set. They're transparent, futuristic, and light. And they pack up into a single case in just about ten minutes flat. So next time you're on the bandstand, strip down and play — PureCussion Drums. Find out more. Call (800) 328-0263.
Mike Graves
Since his audition in December '87, Mike Graves has been enjoying being in Broken Homes. "Auditions are always scary," he admits. "You've never played with these guys before, so you don't know if they're on drugs, if they're going to fall on their faces, if they're good guys, or what. It's very nerve-racking. But Broken Homes are quiet people. They're go-getters, but they're humble and quiet, so sometimes that makes it hard. I walked in, set up my kit, and just went for it. They liked the power, and they liked what I was all about. Playing with them is kind of like digging back into the old files. I played Led Zeppelin, Creedence Clearwater, and Cream as a kid in my grandmother's garage, so I had to reach back and start thinking more like Keith Moon and the '70s kind of style. They liked me. I started rehearsing with them, and then we started working on the album."

He says the album project gave him a great deal of creative freedom. "I used to work with a band in the studio on CBS Records called Bang Bang, which was a flip of the coin. It was like Duran Duran meets Japan, with highly technical beats and drum machine overlays. This band is great because I got to do what I wanted in the studio. They told me the basics of what they wanted, and then I could use my imagination—as opposed to being extremely disciplined. In other bands I've been in, I had to really watch what I was doing. So this was a plus because I got to play my tail off and show some of what I learned in the last 10 or 15 years. We did most of the tracks live, too, which isn't done too often. It was a fun project, and there was a lot of freedom."

"I think the songwriting is extraordinarily different for a late-'80s band," he continues. "What's great about this band is that they have that real soul feeling, which is being lost in today's market. This is like old R&B, which is why a lot of people around town are saying, 'Broken Homes are a dying breed.' I'd have to agree with that. I've played with a lot of people, and it's nice to be with an act that is starting from the real soul roots of R&B and rock 'n' roll. It isn't fake."

—Robyn Flans

Johnny Dee
Britny Fox, a glam-metal outfit out of Philadelphia, have exploded on the scene almost instantly, surprising just about everyone—including the band themselves. Says drummer Johnny Dee: "It's blowing everybody's minds. Nobody can believe it yet."

Dee may be experiencing success with an American band for the first time in his career, but he is no neophyte when it comes to playing drums on the professional level. Formerly a member of Waysted (comprising several ex-U.F.O. musicians), Johnny has already learned to accept the potential pitfalls of success through his earlier experience. Waysted was hailed as a critical success, and the group took off in Europe and Japan. But in America, things basically fizzled out for the unit, which was a major disappointment for Dee. "I thought the situation with Waysted was a real shame because it seemed like we had finally gotten 'the break,'" explains Johnny. "We had all the right ingredients: The album was good, we had a good deal with EMI, and we supported Iron Maiden on their American tour. But there were a lot of negatives with the management, which is really a crucial thing. It just wasn't meant to be," he adds philosophically, "especially since it died the sudden death that it did."

Upon the dissolution of Waysted, Johnny left London and returned home to Philadelphia, where he eventually reunited with longtime friends in Britny Fox. "I had known each of the guys for years," he says. "When the original drummer, Tony Destra, was killed, they approached me to join, but I had to refuse at that time because I had just finished the Waysted album. I really liked what this band was doing, but I had a commitment to the other gig. We were just about to go on tour with Maiden, and I didn't want to pass up that opportunity."

Fate ultimately intervened. "Just at the time that Waysted started going downhill fast," he continues, "the guys in Britny approached me again, so I figured, 'I might as well jump while I can.'"

Despite Britny Fox's current popularity, Johnny views the future with a measure of caution. "I'm definitely of the wait-and-see attitude," he remarks. "I'm not a pessimist, but I've seen things come on real big, real fast and then fade away quickly. I'm hoping that Britny Fox will be rock solid for a long time."

Shannon Ford
When asked what he's been doing for the past year or so, Shannon Ford laughs. "Playing on dirt race tracks," he replies. "Fairs—doing the dirt circuit. Seriously, though, it's nice playing for big audiences. At some of the places we go, the folks don't get a whole lot of entertainment, so they're really appreciative—especially some of those Midwestern places where those folks have been through the mill with the drought and everything. The Gatlins are big out there."

Shannon says working with the Gatlins is a very hip situation. "Larry is a songwriter, and I've always enjoyed working for songwriters because you get to contribute to the birth of the song. He really trusts the band, which is why he used us on the past three albums. He always asks for our opinions. He'll have me play a groove sometimes on the bus, and he'll write around that. He's real open to suggestions, which doesn't happen too often."

"Larry is real groove-oriented, as far as his writing. His music requires somebody with a good sense of time, but you have to be flexible—as with any singer that I've come in contact with—because you have to breathe with the music. That's real important, especially when you've got three guys doing harmony who have done harmony for 34 years together. I have to give them a little leeway as far as the time goes. They depend on me a lot to keep things solid, but from night to night the adrenaline level varies, so I have to be real sensitive to the moods and how they're going to phrase things."

It's a rarity in Nashville for the live band members to be trusted to do the recording projects. "The first album the band recorded since I joined in 1984 was Smile. I did two cuts on that, and Jeff Porcaro did the rest. I had played all the tunes that Porcaro had played in the demos and in rehearsals, but then to hear Jeff play them was a big learning experience for me—just hearing a different interpretation of it. Larry Carlton produced that album, so I got to see a really good seasoned player/producer rapport there. It wasn't much of a hit album, and funny enough, the only singles off the album were the ones the band did."

MODERN DRUMMER
Sensitive, with an uncanny feel for mood, shading and nuance, the emotion of Peter Erskine's playing shines through all his music — from Weather Report to eclectic solo projects like Motion Poet.

"I've always tried to say what I mean on the drums as well as mean what I say, something my father taught me," says Peter.

"You have to express a certain feeling or emotion when you play. It's the only reason music exists for me. It's my celebration, my solace — it's everything to me."

The Yamaha® System is designed to let Peter express his emotions simply and purely. A totally responsive, interactive system, it puts the very best acoustic and electronic sounds at his disposal.

"The quality of the sounds are a terrific starting point — very clean, very powerful, accurate and good-sounding. I can take advantage of the expressiveness I've learned over many years on the acoustic instrument and complement that with D8's tremendous palette of sounds."

Peter Erskine and Yamaha System drums. Playing the emotions.
"I did all of the last two albums," he continues, adding that that included the hit single "Talkin' To The Moon." "That's not a drum," he explains. "It was a TDK reel-to-reel tape box and a set of wire brushes. It was [producer] Chip Young's idea, so the biggest song of that album wasn't even played on a drum.

"I'm not sure the live band will be doing the whole album the next time, because the production deal might be changing. Larry is still behind the band, and I'm sure he'll use us on some of the stuff. But if he uses Larrie Londin or Eddie Bayers or any of the other drummers around Nashville or out in L.A., that's cool, because it's the end product that is the most important thing. I don't need to have the whole deal; just give me a couple of tunes and I'll be happy."

—Robyn Flans

John Densmore

No, the photo at right is not Dave Tough. But the resemblance is intentional. For an L.A. production of a play entitled Bad Dreams And Bebop, former Doors drummer John Densmore was recruited to portray the legendary Tough, who was the only non-fictional character to appear in the play. In addition to performing on drums, Densmore was also called on to simulate an epileptic fit. According to producer Scott Allan Campbell, "One of the pleasures of this project was working with Mr. Densmore. To call him a complete professional would be understating the case. For rehearsals he was always the first to arrive and the last to leave. He researched his character thoroughly, digging up every record he could find that Dave Tough was on and absorbing his style. He kept his drum solos short and tasteful, since John, like Tough, hates soloing."

In Memoriam

Sam Woodyard, who played with the Duke Ellington Orchestra from 1955 to 1968, died in Paris on September 20. The 63-year-old drummer had been hospitalized for cancer three weeks before.

J.C. Heard died in Michigan on September 27. The 71-year-old drummer had been active in Michigan clubs, and had been scheduled to perform with Dizzy Gillespie later that week. (Heard was profiled in the June '88 issue of MD.)

Mousey Alexander died on October 9 in Florida. (He was profiled in the November '88 issue of MD.)

News...

Alvino Bennett on a new Willie Dixon LP and doing live gigs with Chaka Khan, Kim Boyce, Linda Hopkins, and Tim Heintz... Billy Goodness working with Ricky Van Shelton on the road... Jeff Porcaro on an upcoming David Benoit album...

Rick Marotta doing the Tracy Ullman show... Greg Morrow playing drums for Amy Grant on the road, and Terry McMillan playing percussion... Danny Gottlieb recording his second solo offering, and on an upcoming Elements record... Sterling Campbell on the road with Duran Duran through the spring... Glen Hebert on the road with Eddy Raven... Check out Bill Berg on Wayne Johnson's Spirit Of The Dancer... Rayford Griffin playing drums on the road with Anita Baker, and Bill Summers on percussion... Josh Frees on the heavy-metal Sprite jingle with Dweezil Zappa, and recording with Dweezil as well... Michael Barsimanto touring with Ivan Neville &
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**Q.** I recently saw you on your Big Generator tour and was greatly inspired by some of the techniques I learned just from watching you. My question regards the ride cymbal—located precisely to your front right—that you used on “Love Will Find A Way.” It had excellent qualities—everything I would like in a ride cymbal but haven’t been able to find. Could you please fill me in on the exact specifications, including size, weight, and the Zildjian series from which that cymbal comes—along with any other particular qualities that you can tell me about?

**Erik Haag**
Sacramento CA

**Q.** On the tune “Aim High, Shoot Low” from Yes’s Big Generator album, were any special mixing or processing techniques used to record the ride cymbal?

**Dave Rodway**
New York NY

**A.** The ride cymbal Erik refers to is a Zildjian 22” medium crash-ride, which, for me, is excellent in two areas. The crash aspect provides a lot of power, while the ride characteristics make the cymbal very versatile. However, I must stress that I also look at many cymbals at Zildjian showrooms to come up with exactly what I need as far as particularly sounds for particular purposes. So keep looking, Erik, and thanks for the kind words.

“Aim High, Shoot Low” was recorded in a domed room in a 16th-century castle in Italy. We used AKG mic’s with some very distant ambient mic’s in the domed room. Basically, it was just a case of the way the room developed the sound; it got that particular sound out of the cymbal. Thanks for asking!

**Q.** After recently listening to your early work with Frank Zappa—specifically the Joe’s Garage albums—and also your later work on Tinseltown Rebellion, I noticed an evolution in your drum sound, and in the number of sound sources you employed (RotoToms, Syndrums, China cymbals, splashes, etc.). Could you please describe the drumkit that you used with Zappa, and detail its evolution (in terms of tuning and sound sources)? Also, can you tell me whether the changes were your decision, Frank’s, or a combination of both?

**Vinnie Colaiuta**

**Q.** Your playing on the House of Schock album really knocked me out. Could you detail the tuning techniques you use and the type of shell construction you prefer (birch, maple, etc.)? Also, I have noticed that at times you will hit the snare and leave your stick down, while at other times you will lift it back up after the drum is struck. Is this just an arbitrary thing, or is there a reason for it?

**GINA SCHOCK**

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**A.** When I first started working with Frank, I was using a small Gretsch kit. I wanted to use a larger bass drum, but Frank was sort of opposed to it because he preferred the small, 20” bass drum. But I was unhappy with the kit I was using and wanted to expand. I started using different sound sources like RotoToms and a battery of percussion instruments to my left because Frank wrote for a lot of that stuff. It was at his urging that I did that. You could say that the evolution of the set came about as a natural result of a compromise. Going to a bigger drumkit and more tom-toms was my idea; the Rotos, percussion, and electronics were his. I was also experimenting with different kinds of cymbals. I was sandwiching crashes on top of one another and things like that. I also had a gigantic floor tom with a bellows device attached to it. When you pressed on the bellows, air would go inside the drum and the pitch would shift up and down. So I wound up with this kit that was actually a humongous conglomeration of drums and percussion unlike anything that I had seen before—or have seen since, for that matter.

**Q.** After recently listening to your early work with Frank Zappa—specifically the Joe’s Garage albums—and also your later work on Tinseltown Rebellion, I noticed an evolution in your drum sound, and in the number of sound sources you employed (RotoToms, Syndrums, China cymbals, splashes, etc.). Could you please describe the drumkit that you used with Zappa, and detail its evolution (in terms of tuning and sound sources)? Also, can you tell me whether the changes were your decision, Frank’s, or a combination of both?

**Michael Hunte**
Brookline MA

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**A.** The ride cymbal Erik refers to is a Zildjian 22” medium crash-ride, which, for me, is excellent in two areas. The crash aspect provides a lot of power, while the ride characteristics make the cymbal very versatile. However, I must stress that I also look at many cymbals at Zildjian showrooms to come up with exactly what I need as far as particularly sounds for particular purposes. So keep looking, Erik, and thanks for the kind words.

“Aim High, Shoot Low” was recorded in a domed room in a 16th-century castle in Italy. We used AKG mic’s with some very distant ambient mic’s in the domed room. Basically, it was just a case of the way the room developed the sound; it got that particular sound out of the cymbal. Thanks for asking!

**A.** When I first started working with Frank, I was using a small Gretsch kit. I wanted to use a larger bass drum, but Frank was sort of opposed to it because he preferred the small, 20” bass drum. But I was unhappy with the kit I was using and wanted to expand. I started using different sound sources like RotoToms and a battery of percussion instruments to my left because Frank wrote for a lot of that stuff. It was at his urging that I did that. You could say that the evolution of the set came about as a natural result of a compromise. Going to a bigger drumkit and more tom-toms was my idea; the Rotos, percussion, and electronics were his. I was also experimenting with different kinds of cymbals. I was sandwiching crashes on top of one another and things like that. I also had a gigantic floor tom with a bellows device attached to it. When you pressed on the bellows, air would go inside the drum and the pitch would shift up and down. So I wound up with this kit that was actually a humongous conglomeration of drums and percussion unlike anything that I had seen before—or have seen since, for that matter.
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Ian Haugland
EUROPE
Q. I would like some information on a snare drum that I purchased recently. It’s a Ludwig & Ludwig, the lugs are made of wood, and the drum is in great condition. Is this drum a collector’s item?

D.F.
Roseville CA

A. We asked William F. Ludwig, Jr. to research all of the above items, and he provided us with the following information: “The Ludwig & Ludwig drum illustrated in the photograph was made during World War II, which would date it as constructed between 1942 and 1945. During those years, the government restricted the use of metal and other critical materials needed in the war effort. The War Production Board allowed only 10% metal (by weight) in the production of nonessential civilian goods. As a result, the drum companies designed wooden lugs in order to continue some limited production of drums—and thus survive through the war years. Each of these wooden tension casings was laboriously carved by hand, one piece at a time, with the aid of band saws. Your reader’s drum is indeed an antique of approximately 44 years of age. "Ludwig & Ludwig was a pioneer in many drum production areas. Products using materials other than metal had been marketed prior to World War II, because the company saw it coming. On page 8 of the Ludwig & Ludwig catalog for 1941—produced before the attack on Pearl Harbor—a snare drum utilizing plastic lugs (or tension casings) was featured. This was the first drum ever manufactured in normal production ‘runs’ utilizing materials other than metal.

“The 16x28 bass drum with the Frisco Manufacturing decal was made by Gus Mortenson—with whom I was acquainted prior to World War II. I first met Gus when I was on the road selling Ludwig products in 1937 and ’38. He operated a complete drum shop on Market Street in San Francisco, and served all the West Coast drummers very well. He was the inventor of the famous ‘Frisco Heel Pedal.’ If the drum does, in fact, feature a one-piece, ‘one-ply’ mahogany shell as your reader states, that must be one thick, stout ply!

“In regard to the 14” cymbal stamped ‘Davitian, Crafted U.S.A.,’ there were a variety of cymbals—spun in brass—made in America 40 to 80 years ago. These were very low-priced cymbals, with short tonal duration. As most drummers know, resonance in a cymbal is produced by hammering the metal to ‘brittle-ize’ it—without distorting the shape of the cymbal. I would say that this reader’s cymbal was made some time between 1920 and 1940, but I can’t get much closer than that without seeing and handling the cymbal.”

E.J.
Vredehoek, Republic of South Africa
A. You may write to Hal in care of MD. Simply address your letter: Hal Blaine, c/o Modern Drummer Magazine, 870 Pompton Avenue, Cedar Grove, New Jersey 07009. We will be happy to forward your letter and get you back in touch with Hal.

Q. Does Tama have any plans to make double-headed 6” and 16” rack toms available in the Crestar line? These sizes are currently available with one head, but neither I nor any other drummers I know play concert toms—or even like the sound of them. Since Tama already makes the shells in these sizes for the concert toms, why don’t they just add lugs to accommodate a bottom head?

J.H.
Seattle WA
A. We contacted Tama’s National Sales Manager, Joe Hibbs, who informed us that Tama can certainly provide double-headed drums in the sizes you are interested in. You need only ask your Tama dealer to request them as a special order, and you should receive delivery within 90 days. You might expect the 6” rack tom to be a bit more expensive than the corresponding concert tom, due to the additional hardware required. The 16” rack tom would probably be very close in price to that of a 16” floor tom, since the only difference would be the exchange of floor tom legs for a rack tom mount.

Q. I am writing you in regards to a hearing problem. A few years ago, I received a blow to the ear that resulted in a punctured eardrum and a subsequent high-end loss. I was wondering if you could suggest a hearing specialist who caters to drummers. I am interested in some type of high-frequency enhancement device; initial drum impact and bright tones (such as cymbal bells) are frustratingly hard to hear over music.

After years of dedication to the instrument, you can imagine the sense of loss I must feel. I would appreciate any help or direction you can offer.

M.M.
Charleston SC
A. We suggest you contact the Kathryn & Gilbert Miller Health Care Institute for Performing Artists, in New York City. This is a complete medical center dedicated to the specialized maladies of performing artists of all fields, and does include staff and equipment dedicated to hearing problems.

If the distance factor is too great to make an examination practical, it is possible that the staff at the Miller Institute can refer you to another, similar facility or specialist in your area. Medical centers dedicated to arts-related conditions are becoming more and more prevalent across the country.

You can contact the Miller Institute at 425 W. 59th Street, 6th Floor, New York, New York 10019, (212) 554-6314. As a point of reference, you may wish to examine the story that MD did on the Miller Institute in the May ’87 issue.
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Pearl's Prestige Custom MLX 8500 Series Drums are available in the following beautiful lacquer finishes: top, left to right; No. 114 Liquid Amber, 113 Sheer Blue, 110 Sequoia Red, 102 Natural Maple. Bottom; 103 Piano Black, 107 Coral Red, 108 Charcoal Grey, 109 Arctic White.
Different drummers are known for different reasons. Some are known for their work with particular bands, others for their adaptability and taste when it comes to accompanying a variety of musicians and/or singers in the studio. Of those who are known as individual stylists outside the context of a specific band, the majority are accepted as stylistic leaders within a particular musical form: heavy metal, funk, big band jazz.... Someone who has become well known as an individual, but whose style has never remained static and “established,” is Bill Bruford.

Since first becoming a top-line professional approximately 20 years ago, Bill has refused to stand still. Much to the exasperation of certain record companies and managers, who over the years would have liked to see him neatly categorized and pigeonholed for maximum commercial exploitation, he has been moving forward, experimenting, and showing the rest of us the path to the future. In the late ‘60s, with the group Yes, he showed us that there was more to rock drumming than playing a heavy backbeat. And now, in the late ‘80s, he’s showing us that electronic drums are a new instrument and must be approached as such.

It is the self-imposed role of “ground-breaker” that has kept Bruford motivated over the years. From Yes to King Crimson to a series of lineups involving such well respected musicians as Allan Holdsworth and Jeff Berlin, not only did Bill’s style develop, but so did his drum/percussion setup. Flexibility, creativity, and pragmatism control his attitude to his instrument. But just when his record-buying public probably imagined him to be so well ensconced in electronics that it could become a blinkered direction, he came along with an all-acoustic album, Flags, which featured him on acoustic drums and Moody Blues keyboard player Patrick Moraz on piano. This album contains Bill’s magnificent performance of Max Roach’s tune for solo drumkit “The Drum Also Waltzes.”

I pick this track as an example because it demonstrates that Bill has a perfect understanding of, and technical grasp for, the older established jazz conventions. His work with his current band, Earthworks, can be seen as a development, rather than something that has come in sideways. (I’m sure that he would tell me to stop waffling and accept it for what it is, but being a music journalist...) The name “Earthworks” implies breaking ground; and it is Bill’s MIdled keyboard effects that stand out in this context. The lineup of the band is Iain Ballamy on saxes, Django Bates on keyboard, tenor horn, and trumpet, and Mick Hutton on double bass. When you listen to the album Earthworks, it is impossible to be sure of who is doing what; but one thing you can be sure of is that everything is being played. When there are two horns and some keyboard sounds, that is Bruford playing the keyboard sounds from his drum-pads—often in addition to conventional drum sounds. Earthworks is a jazz group that can perform its material live; it isn’t the wearying studio trickery that we have all come to accept!

Bill Bruford has been “well documented” (his expression) during his career. A culmination, to date, of this documentation has to be his book, When In Doubt, Roll! Although at first sight it might look rather like a drum tutor, it isn’t. As with most things that Bill has been involved with, it is a unique idea. There are transcriptions of 18 of Bill’s recorded performances. Each one of these represents a milestone in Bill’s development, and is introduced by Bill with an explanation of why he played what he did, the philosophical thinking behind it, and the career developments that brought him to be playing that particular piece of music with that particular group of people at that time. Bill also includes some technical exercises at the end of each chapter; but these, he says, are “suggestions that serve as kicking-off points to other ideas, and certainly not to be considered as some sort of law handed down from Moses.”

While Bill and I were conducting this interview, we were aware that, although there are plenty of points for discussion in the book, this article mustn’t just be a footnote to the book. But on the other hand, we shouldn’t ignore the book because of the obvious danger of merely repeating the same points and boring people who found themselves reading the same thing twice. Bill does some extremely straight speaking about the music business, but he wants to be clear that he isn’t complaining. “It’s just that I think there’s a gap between the industry idea of generally consuming drum manufacturers’ products through advertisements, and becoming famous—and life as it really is. I think that young musicians should be told just how difficult it can be to get your music heard. Being a paternalistic kind of guy, I worry a lot about young players. [laughs] But they probably don’t need me; they’ll find it all out for themselves, as we did.”

SG: Could we start by defining your attitude to music as an art form? In the past you have separated the music that you play from popular commercial music, by referring to the latter as “folk music.” But it is very much a product of the big business that is the record industry.

BB: Popular music is the song of the common man. I’ve got nothing
against it; it's an honorable tradition and it must date back to the time of the troubadours. In medieval days, say, at the court of King Edward III, instead of having a jukebox that you could put 25 cents into, you'd be able to tell this guy to play you something amusing and witty and that would hold your attention for about five minutes. I think that people like Michael Jackson and Madonna do the same thing today; and I think it is at its best when somebody like Paul Simon sings a song that voices a feeling that is in all of us. When he sings "50 Ways To Leave Your Lover" or "One man's ceiling is another man's floor," he is able to encapsulate feelings that the common man in the street understands well. It's a lyrical art form. Now, I don't play pop music, because pop music isn't really very interesting for the drummer. It just happens to be that way. It was quite interesting some time back, but now it isn't; so I've gravitated away from it. Maybe I'll gravitate back to it when it changes again—which it might do.

You see, that's what I mean about pop music being folk music. It must be easy to execute. It's necessary for the guy in the street to be able to strum the three chords necessary to play Madonna's hit song. It must be technically within the reach of the average person.

SG: In order to appreciate the sort of music that you play, do people require a deeper musical understanding?

BB: Well, I hope not. If I look out at an audience that consists entirely of people with music degrees, I consider it a failing on my part, as a writer. I want the music to communicate, but communicate at what depth? I want it to last a bit. "A Love Supreme" by John Coltrane communicated to a lot of people; and they didn't necessarily understand anything about jazz tenor sax playing. It's good, powerful stuff. A good piece of music or a good work of art comes at you with many layers; it can be returned to. I want to produce music that isn't instantly disposable, that reveals itself over a period of time and bears many listenings. It's difficult to do that and not frighten off the listeners. You're trying to lure them in, in the first place, with something like a gorgeous tenor sax sound or a guitar by someone like Adrian Belew from King Crimson. You're trying to lower a drawbridge so that the listeners won't be frightened away. But having ensnared the listeners, you hope that there are other things that they'll come to like, although they might find them strange—or even repellent—to start with.

SG: One of the literary quotes you use in When In Doubt, Roll! begins, "Popularity is a crime from the moment it is sought." Do you feel that if you set out to do something, thinking "Are people going to like it?" you are banking upon the wrong end of the stick. I've never met anybody who made any music worth a damn by figuring all that stuff out. And the fact that once in a while they may get a hit still doesn't disprove my theory. All it is is music that is fulfilling a market-researched lowest common denominator. The people who move things forward don't really know what they're doing. The Beatles didn't go out and research the market; they did it because they loved it.

I've always fallen out with people who tell me what the market wants. They're always wrong. The record industry is full of second-hand car salesmen who are hopeless at analyzing what the market wants. When they finally find what the market wants, it's always by accident. Somebody gets away, and they all say, "Good grief! How did this person get a hit record?" and they all chase after him or her. It's a fool's paradise, full of people making wild guesses. And that's the environment, that I have to work in: trying to persuade people who have little idea of anything at all—let alone music—that mine is worth recording and putting in a record shop. It's only by sheer stamina, amazing goodwill and good humor, and a belief in what you're doing that you can ever get a record out at all.

SG: The industry people can always quote sales figures and say, "You only sold so many thousand; we wanted so many hundred thousand."

BB: Yes, but they are the people who can produce those hundreds of thousands; I can't. It's an investment priority. If you make an album tomorrow, and I give you a four- or five-million dollar budget, you are going to do very well almost irrespective of what's on that album. Conversely, if you produce a piece of genius and you are allotted a marketing budget of a couple thousand bucks, and you even forget to put an ad in Modern Drummer—goodnight!

There is so much music out there that everybody is drowning in it. Being a bandleader, I am constantly going to people involved in every facet of the industry. The first thing you find is that nobody wants any more music; they're sick of it. The scene
is churning out something like 700 albums a week! Now, have you any idea what that does to the average radio producer? It makes him sick. Of those 700 albums, he’s got a chance of listening to maybe 10. And the 10 he’ll listen to are the ones that are rammed down his throat by an amazingly aggressive marketing force. Assuming that your album is one he’s going to listen to, he’s then got to like it within about 30 seconds or he won’t play it on the radio. If nobody gets to hear your music, nobody buys it. The record company proves itself correct that, “After all, you weren’t worth giving a recording budget to, were you?” and you are effectively silenced.

The threat of being effectively silenced is the only thing that keeps me awake at night. It’s a constant running battle. Effectively you can be told to stop playing, and that’s tricky. Most of my waking hours are spent trying to prevent that threat from becoming a reality. If the music ever becomes too strange or too impossible, you’re silenced. That’s the way it’s set up; that’s the nature of the game. So while I want to produce the most interesting music I can, I still need to retain a voice. These are the things you are considering when you make an album: Just how far can you go if you want your music heard at all? It’s interesting!

SG: It must be easier once you have an established name, as you do, than when you are starting out as an unknown.

BB: An established name is only worth what people are prepared to pay for it. But yes, it’s only because I have that name that I’m permitted to have a record contract at all. If I just brought Earthworks to a record company without my name on it, they wouldn’t even listen to it. It has nothing to do with the music per se. It’s what they can use to sell it with: I’m not complaining about the system, it’s just the way it is. But I think it’s instructive for young musicians to know what’s involved in selling your music.

SG: People still persevere. In spite of the 700 albums a week and so on, everybody’s still trying to push to get into the business.

BB: They are indeed; and there’s a feeling that you might just be lucky. In the recording industry you can just be lucky. But so what if you’re lucky? Life doesn’t stop. I had gold records when I was 21, which was very nice. But your troubles aren’t over; your problems move up to a different level. It’s one thing becoming famous, but there’s a second issue, which is staying famous. [laughs] When you have hit records, people look at you, and quite rightly, for a sustained musical career. When that happens when you are 20, you have to try to sustain it for the next 40 years, until you retire. I’m halfway through that now. You have to keep coming up with new ideas every year. It’s a fairly fast pace.

SG: I’m glad you mentioned that, because even if you are not concerned with “flavor of the month”-type commercialism, as a creative artist you must be under pressure to keep the ideas flowing.

BB: Oh certainly! There is enormous pressure on people like me, who are elected by people like you and your magazine to be something special, to always come up with the goods. To be on the front cover, you must be able to deliver. “You’re the Big Cheese, so let’s hear some hot shit on the drums!” It’s very competitive; an awful lot has been done in drums and percussion in the past few years, and there are a lot of very good young musicians around. So I really feel the need to come up with something fresh—as a drummer, as a composer, and as a bandleader.

SG: I hope I’m not being unfair saying this, but if you were, say, Cozy Powell, you could get together with a group of people and make a hard-rock album, and you wouldn’t necessarily be expected to come up with anything particularly new, because you would be playing in an established musical style with established stars, and in an established market.

BB: Consistently over the past 10 years I’ve been begged by managements to join one of these fall-out bands from the ’70s, but to me that would kill any desire I might have to play the drums. This has to do with my belief in myself as a musician—what I think I’m capable of and how far I can go. I believe that it would be underselling myself to play what anybody else could play. It’s a waste of time, and we don’t have much time. My function is to think up tomorrow’s ideas, directions for the future; that’s my job. We don’t want all drummers to be doing the same job, and it’s important that there are Cozy Powells; we need them. It is just as important that there’s Tony Oxley. It’s also important that there are people like me to experiment in the electronic end of things, and see if there’s an avenue there we can go down. That’s very much what Earthworks is all about. I’m looking at the usability of this electronic stuff, trying it in performance. Is it useful? Is it fun? Can drummers use it to change themselves? And the answer to those questions is yes.

SG: You are one of the few people who seem to have used electronics in an original way. Do you think that drummers are using it to change themselves, or is this still to come?

BB: I think we’re about seven years behind keyboard players with this. We’ve only just got amplifiers, and we’re not really too sure what’s happening. It’s always the keyboard player in the group who knows it all, because he has had to grind through it. When it comes to approach, I could quote the example of two keyboard players: Joe Zawinul and Chick Corea. They are both great players, but Joe Zawinul is a synthesizer player, and Chick, although he plays a synthesizer, is a pianist. He still plays the synthesizer the way he would a piano; he doesn’t treat it as a different instrument. But Joe Zawinul is so lovely because he understands in-
My acoustic setup is a five-piece Tama Superstar kit with Tama hardware and Paiste cymbals. The current setup that I’m using with Earthworks contains an acoustic snare drum and cymbals, but everything else is pads connected to the Simmons SDX.

The SDX is the heart of my drumset. It’s a computer-based instrument, and serves keyboards as well as drums. It’s a 16-bit sampling unit, which is wonderful. With the advent of instant control from the pad over samples, which is what the SDX gives you, there’s been a quantum leap forward since 1987. Any sound can be anything; it doesn’t have to be a little bit of analog this or digital that. You can have any sound you want assigned to a pad. Moreover, and more important than that, the sound is then subject to an enormous range of control underneath the stick: Where you hit the pad and how hard you hit it are both read, and the subsequent sound you get is controlled accordingly. So, a tom-tom sound can be amazingly realistic, if that’s what you want. You can also cross-fade samples. This means that you can assign several samples to the same pad; for example, your child’s voice can turn into a bell, which can turn into a gong—all cross-faded so that you wouldn’t notice the joins. It gives a terrific range of sound, and it’s all manipulable on a 9” TV screen so that you can see what you are doing.

I’ve recently come back from America, where I’ve been using this instrument live on the road, and it’s amazing—absolutely incredible. It’s scary, the quality of sound—the CD-quality samples coming at you in stereo, right from the inside of the P.A. cabinet. It’s a strange feeling for the listener, because it’s so accurate. It’s not as though there’s a drum on stage with a mic’ on it; all the sound is coming out of the speakers.

This is my basic “axe,” as it were, and I would hope to spend five or six years with it. As instruments have increased in quality, there is a longer life span. Actually, I think you could easily spend a lifetime with an SDX, but the company would probably reckon it to have about a seven-year design life.

If you look at the diagram, you can see how my “rig” is connected up. The SDX produces all the drum sounds, but to produce chords from it, I take a MIDI note number from each pad and send it into a mapper. A mapper is a MIDI machine that can alter any functions of incoming MIDI data. This means that any MIDI command coming into the mapper can be reconfigured to be any MIDI command going out. So if I send in MIDI note C3, it can be reconfigured to come out as MIDI note D5. That is then sent on to the MTM (MIDI Triggered MIDI Interface), which will allow the addition of certain effects. So the D passes into the MTM, where it gets turned into a minor 7, and other pitches can be attached to it. After that chord is produced, it is sent along the dotted line to the “Spam” mixer (Simmons Programmable Mixer). At this point effects may be added to it. Sound processing, reverb, and so forth may be added via the Yamaha SPX. The mixer also receives messages from the synthesizer, which is going to give me the chord. That goes into mixer channel 4. I can also send commands from the synthesizer (DX21) to the mapper, via the pedal, to produce various songs.

A song is a particular piece of music that I am going to perform. What it means to the mapper is that it needs a certain order of drums, followed by pitches, followed by pitches and drums. Three maps will be stored in song form in the mapper, so that when I press the pedal it shifts everything smoothly from one row of chords to another, or from drums only to drums and chords. Press it again, and up comes the next configuration. When the tune ends, I turn to the DX21 and call up the sequence of events that I’m going to use in the next number. It’s another series of maps, which I step through with the pedal. I sometimes have it up on my snare drum, so that I can use it by hand rather than foot. So basically, at the press of a button, the whole drumset can change its sound completely.
The infamous P.T. Barnum once uttered, "If you don't bang the drum the loudest, you don't get heard." Although Mr. Barnum was probably speaking figuratively, in the gospel according to the heavy hitters of metal, that's practically the law. Pushing that approach to its very extremes is one of heavy rock's unsung (and reluctant) heroes, Simon Wright. Pummeling his way into the hearts of the world's AC/DC fans, Wright supplies a streamlined, unstoppable, and precisely executed clobber. When AC/DC takes the stage and those cannons are deployed, there's no place to run and hide. In its unvarnished, stripped down, and sweaty glory, AC/DC is, to steal another quote, the real thing.
Drums: Sonor Hi-lites with black finish and copper hardware.
Cymbals: Sabian.
A. 5 1/2 x 14 Gretsch metal snare
B. 10 x 10 tom
C. 14 x 14 tom
D. 16 x 16 floor tom
E. 18 x 18 floor tom
F. 16 x 24 bass drum
1. 15" AA hi-hats
2. 16" rock crash
3. 19" rock crash
4. 20" rock crash medium
5. 24" rock crash
6. 22" AA ride
7. 18" rock crash
Hardware: All Sonor hardware. The bass drum pedal is a Premier 252 with a felt beater.
Heads: Remo CS Black Dot on snare, coated Emperors on all toms and bass drum, except for the 10" tom, which has a CS Black Dot. All bottom heads are Ebony series.
Sticks: Pro-Mark 26 hickory with wood tip.

Before Simon had even heard of the band that he would someday become a part of, AC/DC had begun to establish themselves as the reigning czars of blues-soaked power rock. In fact, Simon was barely 11 years old in 1974, when Scottish-born, Australian-raised brothers Angus (lead guitar) and Malcolm (rhythm guitar) Young devised the format for AC/DC.

Having aligned themselves with singer Bon Scott, bassist Cliff Williams, and drummer Phil Rudd, the Young brothers took the world by astonishing force with releases like High Voltage, Let There Be Rock, Powerage, the live outing If You Want Blood You've Got It, and Highway To Hell, and with global touring.

In 1980, Bon Scott suddenly and tragically died. He was replaced by Brian Johnson, and the band went on to record the pivotal Back In Black in the spring of that year. Dirty Deeds Done Dirt Cheap and For Those About To Rock, We Salute You surfaced next, the latter becoming the band's most successful release.

Phil Rudd's departure in 1983 coincided with the release of Flick Of The Switch. (Rudd has since gone on to become a race car driver and businessman back in Australia.) By that time, Simon had turned all of 9, learned how to play the drums quite skillfully, and, within a couple of months, promptly obtained the coveted gig with the band.

Simon is referred to as an "unsung hero" because, though he provides the heavy ammo that supports the band's frenzied guitars and rowdy vocals, he receives little recognition. And because AC/DC necessitates an economy of frills and fills from their drummer, people tend to overlook the obvious. Wright is the kind of drummer who fulfills his role with utter perfection, but he is anything but high-profile. Like his predecessor, Simon doesn't play in an embellished style. With Wright, when stick hits skin, it means something. Every note is played with absolute conviction.

When the man behind the drums gets in front of a tape recorder, he tends to talk about drums the same way he plays them. A sweet and likable sort, Simon gets right to the point. He may be a man of few words, but when he says something, he really means it. As he so concisely phrases it: "We're not a razzmatazz band; we just like to set on with it."
TS: When and how did drums become your life?
SW: I guess it must have been around the age of 14. I saw drummers like John Bonham on the telly—I like heavy players like him very much—and that was it. I taught myself from there, playing along with records. Then I became a bricklayer at 16—I wasn't part of a band then—until I joined a bunch of schoolmates in a band the following year. We weren't too serious about music. We were more interested in getting drunk. You see, there's really not a lot to do in Manchester when you're growing up.

TS: Did you decide to be a skilled laborer with the thought that you would eventually pursue music as a career?
SW: Yeah, I suppose I did. But I think everyone who picks music as their vocation wants to be up there performing, and getting paid for it is a bonus. But me dad was a drummer, too. He played when he was in the Scouts, and he was in the drum corps. He was always encouraging me to get a kit, and his interest rubbed off on me. He was nothing but encouraging to me, and I couldn't have made it without him—especially during those times when I'd think, "Oh, sod it!" He was a tower of strength.

TS: I guess he must've been the one to actually buy you your first kit?
SW: Yeah, he bought it for me. It was a tom, bass drum, snare, and a pair of hi-hats, and it was only ten quid [approximately $20.00]. I remember that all the skins were slashed. I had a good run out of that; it lasted for about four years. I fixed it up a bit, painted it.

TS: What was your first band?
SW: Tora Tora was the name. [laughs] The name wasn't my idea.

TS: Did you stay with that band until you joined AC/DC, or did you get experience with other bands?
SW: Quite a lot happened in the short period of time between those two bands. I left Tora Tora and joined another Manchester band—they were called A to Z—who had a record deal. Due to things like management problems, that deal fell through. Then I went down to London and joined a band called Titan, which was a club band at the time. A couple of the lads in it were from the heavy metal band Angelwitch. We only did one gig in the space of two years. It was just a waste of time, really, although we did an album. But I was living in London at the time, and I wasn't getting the opportunity to actually play during that time, which was difficult.

TS: Is it true that the AC/DC audition attracted more than 300 drummers?
SW: Yeah. Me and me dad were sitting at home; this was when I was still a bricklayer. He really likes rock music; he must be 60 now, but he's a right old rocker. Anyway, we were sitting at home one night just watching the telly, and this concert show we were watching put on AC/DC from London, and me dad was like, "Whoa! What's this?" It was fantastic, really brilliant. That was the first time I saw them, and I liked them from then on.

TS: Having been a fan of the group, and of original drummer Phil Rudd, did you feel a bit apprehensive about filling his shoes? He had defined a large chunk of the AC/DC sound.
SW: Well, Phil was a great drummer, but I don't think it was as hard for me to replace Phil as it was for Brian to fill Bon Scott's shoes, being the frontman. It wasn't difficult for me to do. I was just concentrating on playing right, so I didn't have time to worry about that.

TS: Is it true that when you initially auditioned for this band, you were not informed that the band in search of a drummer was, in fact, AC/DC?
SW: Yeah, that's right. They didn't tell me until they called me back for a second audition.

TS: That must've blown your mind. Were you at all scared?
SW: Oh yeah. I was shakin' in me boots after that. The whole family went "Yeah!" when I got it. They said, "Hey, you noisy little bastard, you've done it!" I was very lucky. Nobody from the band really said to me, "You're in." They just told me to start rehearsing, then they started talking about touring. It just sort of fell into place.

TS: And you toured first, before recording Fly On The Wall?
SW: Right, I did the Flick Of The Switch tour, then we did Fly On The Wall.

TS: Is there anything that stands out in your memory concerning the whole experience that you hadn't expected? You were still a teenager at the time, playing among seasoned musicians.
SW: Yeah, I was the "baby." [laughs] I suppose the one thing I hadn't expected was that the lads in the band were always there for me. They were tolerant and they were always encouraging me. They pulled me through it.

TS: Was it a smooth transition, playing-wise?
SW: Well, like I said, I hadn't been playing during the Titan period, so I had to work to get fit. I had been living in a tiny flat in Fulham [London], and there was no room for a drumkit in there unless I stuck it in the toilet. So not having played for months was a transition in itself. But it wasn't hard; it came. I had to work at it, though.
It you're just getting started with electronic drums, this is the way to go. The initial investment is minimal, and there are only a few cables to deal with. The audio outputs from the drum machine travel to the inputs of the stereo amplifier, and a second set of cables carry the signals from the amp to the speakers. Since MIDI is designed for multiple instrument networks, and we only have a single device in this system, there are no MIDI cables.

LIVE PERFORMANCE
If you play with a group, the drum machine can add a great deal of flexibility to your performances. It can be programmed to play all the normal drumset parts, while you get a chance to go out front and play a little percussion: congas, shakers, timbales, etc.

If you're not too confident of your percussion chops, going the other way may be more beneficial. If the drum machine contains timbale or tambourine voices, program patterns that will be complementary to your live drumset parts. In essence, you're adding a percussionist to the group.

Another option is to program some of the drumset parts while others are played live, giving you an extra set of hands and feet. As an example, programming only the hi-hat parts would free both hands for snare and tom-tom work. Programming a few bass drum parts or maybe a floor tom stroke here or there will let you create beats and fills that might not be possible without the machine.

How about programming a second drumset part, one that might fit with, or even against, what is being played live?

There are several groups that use two drummers, and there's no reason why one of them can't be a machine! Along the same lines, why not use the drum machine during an extended solo that showcases your playing ability? Use it as a partner in a duet, or even to trade fills.

Synchronization between the band and the drum machine may be a problem at times. Many machines have footswitch jacks in the back that can be used to control the tempo of the unit and the start/stop commands. To solve this problem, set two footswitches near your kit. As you count off the tempo for the band, tap the tempo footswitch with your counts. Then, on the very first beat of the song, hit the footswitch that starts the song playing. From this point on, you will have to follow the tempo of the machine, but with a good set of monitors (either speakers or headphones), this shouldn't be too hard. If the song you're playing contains tempo changes, they should be programmed along with the patterns. In other words, the drum machine will actually handle the time-keeping chores.

Along with using the pattern and song performance features of a drum machine, sounds can also be played from the instrument buttons on the front panel. Place the drum machine so that another member of the band can reach over and play some additional percussion parts when the inspiration hits.

CREATIVE IDEAS
Remember that there are two ways to program a drum machine. You can try to imitate a human drummer's feel, groove, and style, or you can try to make the patterns sound like a machine. While many programmers strive to make the machine sound "human" or "natural," it's not the only way to go. The genres of techno-pop and rap music would never have come about without the drum machine. There is nothing wrong with creating patterns that sound like they were programmed.

If you want to program patterns that sound like a drummer, don't be in a hurry. Humans are capable of an enormous amount of variation and subtlety. Good drum machines are just as capable, but they require a programmer who knows what those subtleties are and is willing to take the time to create them. Instead of using that repeat button to enter the hi-hat notes, use the multi-level feature to spread the hi-hat voice over several buttons at different dynamics. Then analyze your own playing on acoustic hi-hats. Where are the strong and weak parts of the measure, and how many variations in dynamics are you really using? I'll bet more than two or three! Play a steady beat and listen to the sound of your bass drum. Which notes are heavier, which seem to lead into others, and how hard do you play the bass drum when supporting a cymbal crash? Create each note within each pattern with as much attention, detail, and care as you do in your acoustic playing. If you do, then you are really playing the machine, and it becomes a musical instrument instead of a robot. It's not the instrument that creates the music, it's the musician.
The following is excerpted from Norman Weinberg's book *The Electronic Drummer*, to be published this year by Modern Drummer. In this section, Norman describes four possible electronic setups and offers suggestions on how to use them creatively.

**SYSTEM TWO**

In this system, the addition of a multi-pad requires a single MIDI cable. Since the multi-pad makes no sounds of its own, it is only used as a remote controller for the drum machine.

**LIVE PERFORMANCE**

Set the multi-pad near your acoustic drumset. Now you can play any of the sounds from the drum machine without having to use those little buttons on top of the unit. Multi-pads have larger surfaces, specifically designed for sticks, which makes them easier to play.

Let's say the multi-pad supports four different sets of note-number assignments. The first set might consist of eight pitched toms, the second could be eight cymbals, a third might be used for ethnic percussion, and the fourth could be a mixture of different voices. If the multi-pad supports a foot switch to change from one setup to another, the groups of voices can be changed during a performance. These voices can be played in real time, even if the drum machine is being used in pattern or song mode. If the drum machine is playing a song that has been pre-programmed, you can still reach up and hit the multi-pad to fire another crash cymbal, add some extra tom voices, or play a quickly moving bass drum lick with your hands.

**CREATIVE IDEAS**

With MIDI, drum machines can't tell whether voices are being triggered from the instrument pads on the front panel or from some external device that's sending note-on messages. Why not do all of your drum machine programming from the multi-pad instead of those little buttons?

Put the drum machine into pattern record mode, and play the multi-pad. If your drum machine reads note-on velocity levels (all but a few do), then the programmed dynamics will sound much more natural and "human." Dynamics play an important role in the style and feel of music. One of the first things that identifies a pattern created on a drum machine is the lack of any subtle dynamic nuance. By programming the patterns with sticks hitting drum-like surfaces instead of with fingers hitting buttons, the actual feel of the live performer will be captured more accurately.

Once the notes are in the machine, they can be edited with all the features that the drum machine supports. You can still erase a voice, change its stereo placement, adjust its balance in the overall mix, or alter a note's decay time.

If you plan to do drum machine programming with a multi-pad, here's another little trick you can try for a more natural impression. Most drummers have one dominant hand that is slightly stronger than the other. Whenever patterns are slicked "hand to hand," there will be a small volume or tonal difference between the sounds. To create this impression with a machine for a series of snare drum strokes, assign the same voice to more than one instrument button. Then take one of those sounds and change it by setting it a notch softer in the mix (this will simulate the weaker hand). If you can change the envelope or pitch, or add a filter, try it. Then, assign one of the multi-pad's surfaces to each one of these voices. Now you've got two surfaces for the snare drum, and you can use both of them to imitate the right- and left-hand strokes.

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**INSTRUMENTS**

Drum Machine, Multi-Pad

**SOUND SYSTEM**

Stereo Power Amp, Stereo Speakers

**CABLES**

Four Audio Cables, One MIDI Cable

continued on next page
System three adds two pieces of gear: the electronic drumset and an audio mixer. Since there are now four discrete audio channels (two stereo channels from both the drum machine and the kit), a four-channel mixer is the minimum requirement. Although the pads for the electronic kit aren't shown in the example, they will need to be connected to the kit's brain by the proper cables (most often using phone plugs or Cannon plugs).

The MIDI cable routing may look a little odd. The drumset brain is using a special feature called "MIDI mix." A feature of this type is included in several different drum brains, and merges the signal received from the MIDI-in port with the signals being created by the brain itself. This way, both the multi-pad and the electronic drums can serve as master controllers for the drum machine.

**LIVE PERFORMANCE**

As more instruments are added into the system, more care is needed in selecting the proper MIDI channels and listening modes. Let's assume that the electronic kit's pads are playing the sounds from the brain, and the multi-pads are triggering sounds from the drum machine. With the cables routed as shown in the example, the brain and the drum machine should be set to different MIDI channels.

If the multi-pad is sending its information out on MIDI channel one, and the brain is sending on MIDI channel two, both signals are going to be merged before going to the drum machine. Even though MIDI signals are merged, data retains the discrete channel assignment. If the drum machine is set to listen to MIDI channel one in poly mode, it will only fire notes played by the multi-pad. If it is set to channel two in poly mode, it will only listen to instructions from the electronic kit's brain.

If the idea is to use the sounds on the drum machine for both the multi-pad and the electronic kit, put the drum machine into omni mode. Now it will listen to all instructions, no matter what MIDI channel happens to carry them. Depending on the features available on the electronic kit, you might be able to send that mode-change message over the MIDI cable whenever you call up a particular patch on the kit's brain. Using a footpedal to send program-change messages to the brain means that you can change the listening mode of the drum machine while you are in the middle of a performance.

In a system such as this, you may need as many as four different pedals. One might be assigned to the tap-tempo button of the drum machine, another controlling its start and stop functions, a third to move back and forth through the electronic kit's different programs, and the fourth moving the multi-pad through its presets. How in the world are you going to control four different footswitches? Keep a bass drum sound on one of the multi-pad's surfaces, and while your foot is busy with the switches, grab the bass drum notes with your hand instead.

**CREATIVE IDEAS**

Since multi-pads usually let you assign not only the note number of each surface but the MIDI channel as well, think about assigning different channels to some of the pads. Perhaps your drum brain is listening to MIDI channel two in a poly setting, while the drum machine is listening in an omni mode. If a surface of the multi-pad is sending its message on channel one, then only the drum machine will fire. If another surface is set to send on channel two, then both the electronic brain and the drum machine will fire. Depending on the note numbers assigned, one single surface on the multi-pad may trigger a bass drum sound from the kit's brain and a cymbal crash from the drum machine. This is typically called "layering" sounds. Meanwhile, since
INSTRUMENTS
Drum Machine, Multi-Pad, Electronic Kit

SOUND SYSTEM
Mixer, Stereo Power Amp, Stereo Speakers

CABLES
Eight Audio Cables, Two MIDI Cables, Cables Connecting Electronic Pads To Brain

the drum machine is in omni mode, it will respond to whatever is played on the electronic kit. What about using a pad (either from the kit or the multi-pad) to trigger two snare drum sounds for a thicker and heavier texture?

Speaking of layering sounds, several drum brains are capable of sending multiple note-on messages with a single strike. You might be able to layer six sounds (one from the kit and five others on the drum machine) on a single pad. How about a bass drum, two crash cymbals, snare, floor tom, and electronic tom all with a single stroke?

If your electronic kit supports local on/off messages, changing from local on to local off will separate the brain’s internal sound generator from its pads. Now the pads will only fire the drum machine sounds, but the multi-pad (being an external source) can still trigger sounds from both the kit and the drum machine.

By changing one of the MIDI cables, you can have the drum machine fire sounds from the electronic kit. Just run a cable from the MIDI-Out of the drum machine to the MIDI-in of the kit’s brain. Now the drum machine has an expanded number of voices at its disposal. Perhaps you want to layer the snare sound from the electronic kit with the sound of the drum machine’s snare. Be certain that the note number the drum machine sends for the snare drum stroke is the same as the note number assigned to the snare on the kit’s brain.

Along the same lines, if you only want to hear the electronic kit’s snare sound, adjust the volume of the snare voice on the drum machine to its lowest setting. The MIDI note number, along with its actual velocity reading, will still be sent through the MIDI cable, but the volume of that voice on the drum machine will be too soft to hear.
The fourth system adds a rack-mounted sampler. Because there are now two more stereo audio signals, a six-channel mixer is the minimum requirement. Notice that there is no MIDI cable connected to the MIDI-Out of the sampler. Since this instrument doesn't have any type of input device, no messages need to be sent from the sampler. Keep in mind that the signal coming from the MIDI-Out port of the electronic set's brain is a merged signal from both the brain and the multi-pad. This signal is sent to the MIDI-in of the sampler, and from there continues on to the drum machine by way of the sampler's MIDI-Thru port (an exact duplicate of the MIDI-in signal).

LIVE PERFORMANCE

Now that a sampler has been added to the system, the sky's the limit. We're going to assume that the sampler came with several disks of factory sounds, many of which are drums. Let's see what this electronic drumset can sound like!

Set the drumset's brain to send messages on MIDI channel two, and have the sampler listen to the same channel. Find a great-sounding snare drum on the sampler, and assign the note number sent from the brain to the note number that has the snare sound. Your electronic kit is now playing the sampler.

If your drum brain allows saving note numbers as part of the patch information that is stored in memory, you can do some pretty incredible things. Let's say that the sampler is extremely flexible. (You did buy a sampler that allows several split points, has lots of memory, and lets you assign any sample to any key, didn't you?) Load a bunch of drum sounds into the sampler, and assign them to six adjacent note numbers (or eight if your kit has that many pads). It might be easier if you follow a particular format, such as bass, snare, tom 1, tom 2, tom 3, and tom 4. Keep assigning drum sounds to note numbers until your sampler runs out of memory or split points. Now, build a patch on the electronic kit that sends those first six note numbers. Save that patch into internal memory and build another patch that uses the next six (or eight) MIDI note numbers. Get the picture? You're building new drumsets with new sounds that can be called up by changing the preset on the electronic brain. You can combine different sounds from the sampler by building more kits that have different combinations of note numbers. How about combining the bass drum from the first kit with the snare of the third and the toms of the fifth? You're going to run out of memory on the sampler long before you run out of patches on the electronic set.

You've still got all the flexibility that you had in the last system, so try playing around with local on and off messages, or sending multiple note-on messages with a single stroke. You may also want to layer sounds from the electronic drum's brain, the sampler, and the drum machine all together. Here's how. Set the brain, the sampler, and the drum machine all together. You might want to make different pads send messages on different MIDI channels. By changing the MIDI channel and listening mode of the other three devices, you can
INSTRUMENTS
Drum Machine, Multi-Pad, Electronic Kit, Sampler

SOUND SYSTEM
Mixer, Stereo Power Amp, Stereo Speakers

CABLES
Ten Audio Cables, Three MIDI Cables, Cables Connecting Electronic Pads To Brain

have some pads trigger only the drum machine, only the kit's brain, only the sampler, or any combination of two of these units.

CREATIVE IDEAS
Now that you've got a sampler, sample all your acoustic drums, cymbals, and anything else that you own. If you want to play the sound of your own acoustic snare drum from the electronic pads, you can. Contact a band director or percussion teacher at a local school or college. Spend an afternoon and sample instruments you couldn't possibly afford to buy yourself. Timpani, chimes, gongs, Latin percussion instruments, hand cymbals (real crash cymbals), additional suspended cymbals, marimbas, vibes, xylophones, log drums, and the list can go on forever. Sample as many sounds as you possibly can, save them on disk, and take them home to edit. Go to a museum and see if you can get permission to sample authentic instruments from Africa, South America, or the Far East. Adding a talking drum or gamelan to your sound library might start your creative juices flowing.

Change the MIDI cable configuration so that the drum machine's MIDI-Out port is connected to the MIDI-in of the sampler, and you've got a new drum machine. Simply place the samples under the proper note numbers and turn the volume of the drum machine off. The MIDI messages will go to the sampler, and the sampler will fire the sounds, but the original sounds of the drum machine won't be heard.

Since MIDI messages only tell an instrument to play a certain note at a certain time, just about any sound in the world can be fired from that note number. For some new ideas, play your old drum machine patterns and songs using marimba or electric guitar samples. Or, for that matter, turn your electronic kit and multi-pad into a drum synthesizer. If the multi-pad has eight surfaces and the kit has six, there are 14 different pitches to work with. This can be arranged in any number of ways, from over an entire octave of chromatic pitches to a certain melodic configuration. How about doubling the melody of a song by playing the pitches with your sticks, as well as the percussion sounds that might be layered by the drum machine?

Some electronic brains allow you to send one set of note numbers when a pad is struck softly and another set of numbers when it's struck harder. In essence, this can double the amount of sounds that are available at any one time. Instead of only 14 pitches, you can access 20 (and if the multi-pad also incorporates this feature, 28 pitches).

All along, we've assumed that the drum brain that is being used is capable of sending multiple note-on messages for a single strike. As well as using this feature to layer drum sounds, it can be used to create chords on the sampler when it is playing pitched instruments. By carefully laying out the samples under the different note numbers, you may have a drum sound and a chord from a melodic instrument firing at the same time.

In addition to all this stuff happening with the MIDI messages, most samplers are capable of some hip tricks of their own. Try taking a single sample and adding a low-pass filter, adding some modulation to the pitch, or even assigning modulation to the stereo placement of the sound. Some samplers will let you assign two different sounds under the same note number. (How many layers are available now?) These two samples can be fired at the same time, velocity switched, or velocity faded into each other.

Some samplers will let you set a delay time for the sound. Unlike a digital delay audio processor, this delay is from the time the note-on message is received to the time the sound actually begins. By delaying a sampled snare sound by just a few milliseconds and triggering it with the snare from the electronic kit, a type of slapback can be achieved. Now, send the electronic kit's snare through the left audio channel and the delayed sound from the sampler out the right audio channel. We're talking mucho slick here!
Amplifier: A device that increases the level of an audio signal.

Amplitude: The volume of an audio signal.

Analog: Creating or altering sound using voltage-controlled circuitry. Opposite of digital.

Attack: The beginning of any sound or event. May vary from slow to fast.

Attenuator: Device used to reduce the amplitude of an audio signal.

Auto-Correct: Function found on most sequencers and drum machines, whereby notes played during real time entry are assigned to the nearest available rhythmic value. See also "Quantize."

Bi-Directional: Microphone pattern sensitive to two fields of sound.

Bit: A single place in a byte of information. Has a value of either zero or one.

BPM: Beats per minute.

Byte: A piece of information made up of 8 bits.

Cardioid: A narrow, directional microphone pattern that picks up sounds directly in front of the mic.

Cartridge: A plug-in memory storage device that may be either RAM or ROM.

Cassette Storage: Digital sequencer or drum machine patterns stored on cassette tape.

Chain: An ordered series. On a drum machine, refers to a series of songs, each consisting of a series of patterns.

Channel: In MIDI, refers to the 16 channels of numerical data designations that share a single cable.

Chip: Integrated circuit device made of many components, built upon layers of silicon.

Chorusing: A time-delay effect whereby two or more similar signals are detuned slightly from one another.

Click Tracks: Timing reference signal recorded on tape containing a single click for each basic beat. Also referred to as sync track.

Clipping: Distortion of an audio signal when the signal threshold of the input section of a mixer or amplifier is exceeded.

Clock: Device producing a steady pulse for the synchronization of sequencers, drum machines, and sampling rates. Typical clock rates are 24, 48, and 96 pulses per quarter note.

Computer Interface: A piece of hardware that enables a computer to communicate with external devices.

Controller: Device capable of producing a change in some aspect of sound, by altering the action of some other device.

Cross-Fade Looping: Feature found on some digital samplers that creates a smooth transition by cross-fading the loop end point to the loop start point.

Decay: The retardation in volume of a single note or a reverberated sound.

Delay: An electronic means of starting an event after a predetermined amount of time.

Digital: The creation and modification of sounds using mathematical data. Opposite of analog.

Dispersion: Width, in degrees from center, that a speaker can project while maintaining a flat response.

Dry: A signal with no added reverb or delay.

Dynamic Headroom: An amplifier's ability to handle audio peaks without clipping.

Echo: Repetition of a sound where each repeat mirrors the original, though usually lower in amplitude than the one before.

Edit: To change, modify, or fine-tune existing data.

EPROM (Erasable Programmable Read Only Memory): Electronic chip that can be programmed a number of times.

Equalization (EQ): Adjustment of the frequency response of a signal to achieve an improved or different result.

Filter: Device used to remove specific frequencies from an audio signal.

Gain: Boost or attenuation of an audio signal.

Hertz: Unit of measurement used for expressing frequencies.

Layering: Combining two or more voices to create a more complex sound.

LED: Light emitting diode.

Loop: Piece of material that plays repetitively.

Master: A device that controls the operation of other components.

Merge: To combine data.

Microprocessor: Computer processor contained on a single chip.


MIDI Event: One complete grouping of MIDI information.
TERMINOLOGY

MIDI In: Input found on a MIDI instrument that allows the instrument to receive MIDI messages.

MIDI Out: An input found on a MIDI instrument that allows the instrument to send MIDI messages.

MIDI Thru: An input that duplicates messages received at MIDI In and sends them to other MIDI devices.

Mixer: Device that adds two or more audio signals together for control of balance, tone, and volume.

Modulation: The process of changing the character of an audio signal.

Monophonic: Capable of producing only one note at a time.

Mono Mode: MIDI mode that enables an instrument to respond monophonically to information arriving over a specific channel.

Noise Generator: Random fluctuations in voltage perceived as hiss. (White Noise: equal harmonics. Pink noise: Heavier lower frequencies.)

Omni-Directional: Microphone pattern sensitive to sounds arriving from all directions.

Omni Mode: MIDI mode that enables an instrument to respond to information over any of the 16 MIDI channels.

Outboard Gear: Various devices used to produce echo, reverb, distortion, compression, etc.

Panning: The placement of an audio signal, left to right, between two speakers.

Parameter: Any adjustable control that can be set by a programmer when editing a sound.

Patch: The connecting of inputs and outputs of various sound components with patch cords.

Polyphonic: Instrument capable of producing more than one sound at a time.

Poly Mode: A MIDI mode that enables an instrument to respond to information arriving on a specifically numbered MIDI channel.

PPQ: Pulses per quarter note.

Preamp: The initial amplification stage of a signal before going to the main amplifier circuit.

Preset: A pre-programmed sound or pattern stored permanently in the internal memory of a device.

Programmable: Any device capable of storing parameters in memory for instant recall.

PROM (Programmable Read Only Memory): A chip on which information can be encoded once only and never erased.

Quantize: The process of taking any series of values and altering those values to conform to certain defined steps. See also Auto-Correct.

RAM (Random Access Memory): Digital storage medium that allows data to be written or retrieved anytime.

Real Time Mode: Mode of programming in which data is input against a clock, at a speed proportional to the speed at which that data will be played back.

Reverb: Sound characteristics of open space. An ambient quality produced from soundwaves reflected off of hard surfaces.

ROM (Read Only Memory): Memory chip on which contents cannot be altered.

Sample: Digitally recorded and stored representation of a sound.

Sampler: Electronic device that records and plays back digital representations of acoustic sounds.

Sequencer: Device capable of digitally recording and playing back MIDI data, and allowing for manipulation of musical parts.

Slave: Any device whose operation is directed by another device called a master.

SMPTE (Society Of Motion Picture and Television Engineers): Time code used in the synchronization of equipment such as tape recorders, film projectors, and videotape players.

Song: A list of sequencer steps or drum machine patterns played back in a specific desired order.

Song Position Pointer: Auto-locator information enabling MIDI instruments to remain synchronized with one another.

Status Bytes: Values that differentiate various MIDI commands and their associated channel numbers.

Step Time Mode: The process of entering notes or events one at a time.

Sync: Synchronization of electronic devices by means of the clock output of one being matched to the external clock input of the other.

System Exclusive: MIDI data that can be transferred to other units made by the same MIDI manufacturer.

Track: One of a number of memory banks in a multi-track sequencer.

Trigger: A quick voltage spike indicating the start of an event.

Velocity Sensitive: The capability of a device to send control information corresponding to the speed or energy with which that device is struck.
I'm sitting here watching *Tom And Jerry*, trying to think of ways to start this article. I thought about telling you all of the reasons that drummers should know something about sound reinforcement (like knowing when unscrupulous salesmen are sticking it to you, knowing how not to fry your new equipment, and knowing how to take care of your investment). I thought of telling you how any musician should know some audio basics (since it will only make your gigs run more smoothly). I even thought of telling you that you could "impress your friends and family" with tons of new audio facts. But I'm not going to tell you any of this. I just want to say that I was a engineer. I am surprised now at how little the average musician knows about mic's. Although it's an engineer's job to know the specifics on how mic's work, a drummer should at least know basic miking techniques and the differences between different types of mic's. I'm going to avoid going into the technical aspects of mic's (lucky you). I suggest that for more information you read Bob Lowig's "Choosing A Mic' For Acoustic Drums" in the October '88 issue of *MD*.

First, let's quickly review the basic properties of mic's. Before you yawn and decide to skip this section, I'll make a deal with you. Read it and I'll give you some really cool tips on miking your drumset. (I hope you're not offended by outright bribery.)

The terms "omni" and "cardioid" describe a mic's directional response. An "omni-directional" or "omni" mic' is equally sensitive to sound from all directions. Many musicians and engineers have a strong and somewhat unreasonable aversion to omni's. Due to their simplicity, omni microphones enjoy several advantages over directional mic's. An omni does not suffer from handling noise. (It won't make noise if you bump into its stand.) The omni has a greater rejection to wind noises and popping consonants in speech (such as p's and b's), since the omni senses pressure changes, instead of the movement of air. Thus, the omni won't need an elaborate windscreen. The omni also utilizes a higher-tensioned diaphragm that enables it to accept higher sound levels before overload. The omni has a flatter frequency response than does any other kind of mic', and this doesn't change with distance. On top of all of this, omnis cost less!

**MICROPHONES**

Probably the single most important piece of equipment that captures your band's acoustic sounds is the microphone. The mic' is that magical device that is going to pull your sounds out of the air and convert them to electrical signals. Given this, it's surprising how little the average musician knows about mic's. Nevertheless, there are a few basic rules of thumb that you can take into consideration. As a general rule, smaller-diaphragm mic's can receive much higher sound pressure levels. Therefore they might be more suited for close placement on a snare drum (which puts out quite high levels up close). Omni-directional mic's may have all the great properties stated earlier, but they are limited for isolation purposes. A mic' for vocals should have a built-in windscreen and should probably have a proximity effect optimized for vocals.

Next let's consider how many mic's you need. Let's start with your set and consider your situation. If you are playing jazz in a small club, you could probably get away with a single overhead omni (or less!). But if you are playing pop/rock in any larger situation, you will probably want to individually mke your set. You will also want at least one overhead; a larger set will probably require two. Not only will two overheads give you good stereo imagery (if you are running in stereo), but they are
probably necessary if you have many cymbals.

Many drummers are now using miniatures condenser mic's (i.e., Yamaha’s MZ-204). These are clipped directly onto drum hardware and provide several advantages over larger, traditional mic’s. They don’t require a tangle of stands, are easy to position in a large set, and—since they have a small diaphragm—can handle the high sound levels of close-miking. Zildjian offers a version for cymbals (their ZMC-1 system) so you can individually mic’ cymbals—a neat (but expensive) idea.

Now the other members in your band have to decide whether they are going to mike their speaker cabinets or run direct lines from their amps to the sound board. Running direct (which we will consider later) greatly simplifies your sound setup. But on some instruments—especially guitars—the direct sound is not quite as rich-sounding as that of a miked cabinet.

Consider how many people in your band are going to be singing. There is a wide selection of vocal mic’s to choose from. A wireless system gives a lead vocalist more freedom, but there could be a problem with reception if large sources of metal (such as a column) come between the mic’ and the receiving antennae. Consequently, careful placement of the receiving antennae should be taken into consideration. Unfortunately, wireless mic's eat batteries. This might not sound like an important consideration when you’re getting ready to spend thousands of dollars. But inevitably, one night your vocalist will forget to turn the mic’ off, and you'll find yourself driving around at 11:30 on a Saturday night trying to find a 7-Eleven with 9V batteries and be back in time for your next set. Of special interest to drummers are the many headset mic's available today. As a singing drummer, I’ve found a lot more freedom with headsets. One brand—TOA—even offers a model that has a built-in monitor mixer that allows you to mix your own voice with the monitor mix being sent to you from the console. You hear your “Customized” mix in the unit’s earplugs. (For more info on headsets, see Rick Van Horn's article on “Headset Microphones” in the Electronic Review column in MD's September ’87 issue.)

Now for those cool miking tips I promised you. Just as important as the mic’ itself is its placement. After consulting with some top engineers in the field and drawing from personal experience, I've compiled some basic techniques. By no means are these gospel! I have to stress the importance of taking the time to experiment with mic’ placement. Moving the mic’ a couple of inches can really make a difference. Use your ears; there are no rules!

Hi-hat. If you really want a high, crisp hat, you should mike close to the bell, from the top. For more "meat," mike closer to the edge. Never point the mic’ directly at the side of the hi-hat, since the air pushed by its opening and closing will make it sound "woofy." Small omni condenser mic’s often work well. A lavaliere (the kind of mic’ that announcers clip to their ties) works surprisingly well. They are cheap and you can tape them directly to the upper part of the hi-hat stand.

Snare drum. I usually use a small-diaphragm mic’ that I can position about 1/2" above the top drumhead and about 2" in from the edge. (Remember, smaller diaphragms can handle higher sound pressure levels.) Putting the mic’ more perpendicular to the head gets you more high end; putting it parallel gets you less. If you're using cardioids, use the rear of the mic’ to your advantage. That is, place the mic’ so its rear rejects other parts of your set as much as possible. (This policy applies equally on the entire set.) A Shure SM 57 or 546 usually works well on snare drums, although you can also try a smaller condenser mic’.

Kick drum. There are a lot of variables at play with the kick, since every drummer has a different array of household items inside. (I've seen everything from socks to stuffed animals.) Actually, kicks without front heads are easier to mike, but hey, face it. They don't look as good on stage. A simple way to mike a kick (with or without a front head) is to lay the mic’ in the muffling inside the drum. By moving the mic’ closer to the center, you get more attack; towards the outside you get more boom. This method also doesn't require stands. (Have you priced stands lately?)

For kicks with front heads you can use an omni, since isolation is inherent. Another technique for kicks with front heads is to place the mic’ in a sound hole cut into the head. The hole should be at least 6" across and off to the side. You can place the mic’ right in the hole—although there is a lot of air rushing by the mic’ that could cause the kick to sound floppy. Traditional kick mic’ choices include Sennheiser 421’s and AKG D-12’s. Other good mic’s are Altec...
633's, Electro Voice RE-20's, and even Electro Voice PL-80's (which sound pretty good and aren't that expensive).

Toms. Miking techniques for toms depend on whether you have concert toms or double-headed toms. For concert toms you can simply stick the mic up inside. Adjusting the distance from the head makes a big difference in sound, so experiment with that. For double-headed toms, follow the same miking techniques that apply for snares. Sennheiser 421's are my favorite tom mic, although Shure SM 57's and 546's work well. Audio Technica 836's and 414's also sound good and are relatively inexpensive.

Overheads. Overheads should be placed in a way so as to best pick up your cymbals. For a smaller set, one overhead mic placed equidistant from all your cymbals works well. If you have a larger set, you should use two overheads. Try to keep the mic's as low as possible while still out of reach of your swinging sticks. Since every drummer has a different cymbal setup, you'll have to use your judgment as to the lateral placement of the mic's, although you can try placing them according to where your shoulders are. Just try to cover every cymbal to the greatest degree possible. I happen to like cardioid will work well.

Now how about the interfacing of Hi-Z and Lo-Z? If you're sitting there going, "Man, what's this guy talking about?" don't freak out. The "Z" is just the symbol for impedance. You don't need to understand the electronic principles of impedance, but you do need to know how it affects your system. Improper impedance matching causes signal loss (not a good thing!). The trade standard is that 'A' guitar cables are Hi-Z, and XLR mic' cables are Lo-Z. That is why direct boxes are of utmost importance. They take Hi-Z signals and convert them to Lo-Z. If your board doesn't have Hi-Z inputs, you're going to need direct boxes for keyboards, guitars, and any other instrument you plan on running direct (that is, without miking). The direct box simply plugs in between the instrument and the board. You should make sure that the direct box has W inputs and XLR mic' outputs. Direct boxes are also helpful in getting rid of unwanted hums and buzzes that often come from instruments with pickups, such as guitars.

Now let's consider the difference between balanced and unbalanced lines. As I said before, the two standard types are 1/4" unbalanced (guitar cables/Hi-Z) and 3-pin, XLR balanced (mic' cables/Lo-Z). Balanced lines will be much quieter, but tend to cost a bit more for cables and for the electronics to interface with them. Unbalanced cables are great for connecting guitars to their amps, or keyboards to submixers. But, as a rule of thumb, when running cables over long distances you should use low impedance mic's and lines. Unbalanced lines will cause high-frequency feedback. A 1/4" Hi-Z unbalanced snake can cause very high-frequency feedback. A single-shield snake might cost less, but this is simply false economy. It will wind up causing more trouble than the saving is worth.

One more thing: How about loudspeaker cables? You should use heavy gauge (12-16) wire that is jacketed for strength. Small gauges lose the power and performance you bought in your amp. Long cable runs also demand fat wire. (One way to keep speaker wires short is to keep the amps on stage.)

**CONSOLES**

Invariably, all of the signals from mic's, direct instruments, or other electronics are going to go through a mixer before amplification. My band first set up our brand new P.A. at practice. It was a prime example of "the blind leading the blind." To everyone in the band, the mixing console seemed a confusing array of mysterious knobs and dials. Little did I know then how simple the structure of a board actually is.

For sound reinforcement, a console is set up in "strips." [See Figure 1.] Starting at the top of any individual channel, the signal flows through each block from top to bottom. Each channel is identical, so if you can understand one, you can understand 90% of the board. While pondering how to explain this section, I realized that the best thing would be for you to see a simplified flow diagram of a typical mixing board. [See Figure 2.] I suggest that, after each block is discussed, you find it on the diagram and understand what it is doing to the signal.

The first block is the mic' pre-amp, controlled by an attenuator, or "mic' trim" knob. This takes the low-level mic' signals and boosts them up to line level—well above the noise of the circuitry (called the noise floor). Some boards have a switch to distinguish between mic'-level inputs and line-level inputs, so that line-level signals can bypass the pre-amp to avoid distorting it.

The correctly "trimmed" signal is then split, with one line going on into the mixer, and one going directly to the monitor send, before undergoing any EQ or processing. This allows the monitor mix to be processed independently from the individual channels.
The drum set is a new instrument:
With electronic percussion, sampled acoustic sounds, special effects treatments, it's growing into a more expressive, wider-ranging, harder-driving instrument. But "old reliable" mics and miking techniques don't solve the problem of integrating acoustic drums and cymbals into this technically evolved context.

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The Beyer Percussion Mic Group—performance-matched to every acoustic element of the modern drum set. Discerning drummers and engineers use these specially designed and selected mics because they deliver truthful drumset reproduction for sampling, recording or live reinforcement. Every Beyer Percussion Microphone is constructed to withstand the physical punishment a drum set absorbs. Each one is chosen for a particular combination of critical performance characteristics.

Power
Dynamic range is the key to capturing the impact of the drum. Beyer Percussion Mics like the M 380 handle the extreme SPLs of close miking without overload, yet capture the subtleties of touch that distinguish a player's unique style.

Character
More than any other factor, it's what sets acoustic drums (and drummers) apart from the crowd. Beyer Percussion Mics like the M 422 has a small diaphragm for the instantaneous response that produces a crisp, well-defined sound.

Speed
Percussive attacks test the entire system's transient response. Like several Beyer Percussion Mics, the M 422 has a small diaphragm for the instantaneous response that produces a crisp, well-defined sound.

Control
Isolation of individual drums and cymbals is critical when a variety of microphones are used on the drum set. Beyer Percussion Mics such as the M 420 have tightly controlled polar patterns. The 'top of the set' snare and tom mics also employ a precisely tailored frequency response to minimize leakage from the bass drum and floor toms.

Accuracy
The drum set generates every frequency in the audible spectrum. The extended frequency response of the MC 713 condenser and the

other Beyer Percussion Mics accurately reproduces all of them.

Get the whole story: More information on how drummers, engineers and other audio professionals can select and employ the Beyer Percussion Microphone Group for optimum results is available in What every Drummer Should Know About Miking Drums, a poster-size manual. It covers mic selection, tips for proper placement, and presents a range of setups to accommodate every playing style (and every budget). For your copy, send $3.00 to: Beyer Dynamic Inc., 5-65 Burns Avenue, Hicksville NY 11801.
Drum Festival '88 artists: Carl Palmer, Steve Smith, Peter Erskine, Harvey Mason, and Dennis Chambers.

Joe Morello was presented with the MD Hall Of Fame award.
Carl Palmer’s clinic was sponsored by Remo and Paiste.

Joe Morello with Carl.
Harvey Mason's clinic was sponsored by Sabian.

Peter, Vic Firth, and Harvey.
Dennis Chambers' clinic was sponsored by Pearl.

Kenwood Dennard, Dennis, and Anton Fig.
Peter Erskine's clinic was sponsored by Evans and Vic Firth.

Rod Morgenstein, Peter, Danny Gottlieb, and Horacee Arnold.

Ron Spagnardi and Rick Van Horn presented special door prizes to the two people who traveled the longest distances to attend the festival: Duron Johnson (far left) from Alaska, and Joseph Ben-Dor (second from right) from Israel.
Steve Smith & Vital Information were sponsored by Sonor and Zildjian.

Mike Miller, guitar; Steve Smith, drums; Kai Eckhardt, bass; Dave Wilczewski, sax; Tom Coster, keyboards.
There are five quality control points at our factory. Yet, the final one is in the hands of the artist. These drummers and percussionists could play anything. But they have made their choice with Paiste. We’ll let Alvino, Billy, Ronald, Ndugu, Rayford, Ricky and Steve tell you in their own words.

Then, find out for yourself what it took for these fine artists to stick with Paiste. Visit your local dealer and play a Paiste cymbal—the best quality—and consistency—you can find...anywhere.

ALVINO BENNETT
...consistency with the sound, the colors, the textures, they all mean a whole lot in the different types of music I play...I use the 3000, because it is a very crystal clear cymbal, it picks up very well, and the 3000 Ride is like a monster...the sound from one cymbal to another, such as from one Ride to another, or one Crash to another, is very consistent...

BILLY HIGGINS
...I look for certain sounds, I look for what sounds good with the bass. Certain cymbals are in tune with everything...my favorite is the Formula 602...it covers a lot of territory...they last long, and they stay pretty well...the older they get, the better they get...a lot of people don’t understand that you have to PLAY the cymbal to get YOUR sound out of it...

RONALD SHANNON JACKSON
...that’s basically what they are to me: control, warmth and coloration...the cymbal sounds have to relate to the...degrees of intensity that the music requires...it seems that Paiste cymbals are in congruence with the electric magnetism that is in today’s music...
CONTROL TEAM

LEON NDUGU CHANCLER

...I believe that if you play drums, if the drummer knows the instrument, he can get as wide variations of sounds out of not a lot of gear...the most impressive thing about Paiste is that they are consistent from cymbal to cymbal...recording-wise, I still use the same set of cymbals since about 1972, they have lasted that long, because I've taken care of them...

RAYFORD GRIFFIN

...I like cymbals...I play them a lot for accents and colors...the main thing I like about [Paiste]: the sound of the cymbals is so distinct, as far as cutting through music...the 3000 is the cymbal sound that I hear in my head when I am thinking about cymbal sounds...I also like the new 2000 Sound Reflections a lot for my own taste...

RICKY LAWSON

...the nicest thing I like about [Paiste cymbals] is that the sound stays truer longer...every size is a color, like red, blue, green...you use that to highlight the song, or the melodies...in certain sizes and ranges I like the ColorSound, and for the same thing, I like the 2002 Series, because it is a good all around cymbal...

STEVE JORDAN

...nothing is worse than bad sounding cymbals...you need different sounds for different things...Paiste is the most versatile cymbal...they look and sound good...the Rudes and the ColorSounds each have their advantage...the 3000 is superior in sound...it's up to the level of professionalism...it covers all the bases...

The statements in this text are based on interviews conducted with the artists on their playing, cymbals, sounds, and on Paiste. Write to us and ask for the ones you'd like. Mention Dept. USA4. Please include $3 for cost, postage and handling.
When faced with the prospect of doing a cymbal review, there is sometimes an immediate physical reaction resembling a cringe on the part of the reviewer. First, the vocabulary developed in cymbal talk wouldn't exactly cause most linguists to cheer; trying to describe a sound via print is still a greatly underdeveloped art. Second, you're dealing with an item that is very subjective in nature. As with food—where some people love certain flavors and others would just as soon skip a meal than eat those types of foods—some drummers may think a certain cymbal is virtually the definition of "hip," while others feel they could cull more pleasing sounds out of Murry's Junkyard. So obviously, no cymbal review is intended to be the last word on the item, but merely an attempt to give the reader an idea of what the darn things sound like. That said, with the MD offices recently deluged with a delivery of Paiste 2000 Sound Reflection (hereafter simply referred to as "2000" for the sake of space) and 3000 series cymbals, our editorial department gathered 'round the drumset and tried to make some sense out of the sea of metal before us.

Hi-hats

Of all the different types of cymbals that Paiste sent us, the hi-hats seemed to be the most consistently useful and appealing. In the 2000 series, we tested 13" and 14" Sound Edge, 14" medium, and 15" heavy hats. The 3000 series included 15" Sound Edge, 14" medium, and 13" and 14" heavy hats. Sound Edge hats feature bottom cymbals that have a wavy, clam-like profile—a design intended to avoid air-lock—and generally had more volume and cut. Compared to the 3000 line, the 2000s were not as powerful-sounding. They also sounded a bit drier, due to their lighter weights and less lathing. Particularly nice were the 13" and 14" Sound Edges—the 13" being predictably high-pitched and quick, and the 14" being a good choice for someone looking for a nice "chick" sound, but in a slightly softer-sounding set of hi-hats.

The 3000 series hats displayed a fuller range of overtones and more sibilance. Standing out among the 3000s were the 13" heavy hats, which had a very clear "chick" sound and responded well to all types of stick work. This set of hats would work well in just about any setting, from jazz to rock. Also great were both sets of 14" 3000 cymbals: The medium set had a slightly lower pitch and would work well as general-purpose hi-hats; the heavy hats had a nice, strong "chick" sound, with more projection, and would work better in a rock context.

Ride Cymbals

Though the 3000 series is supposed to be Paiste's top line, in general, we were happier with the 2000 series rides. The 2000s we tested included a 20" Power Ride and a 22" ride, while the 3000 series group comprised a 20" ride, a 21" Power Ride, and a 22" heavy ride. The 2000s generally had a more pointed sound, while the 3000s were more washy. Though none of the bell sounds elicited standing ovations from us (Paiste's bells tend to be a bit smaller and flatter than the bells of other makes), the best was found on the 3000 22" heavy ride. That cymbal's overall sound was a bit choked, but improved with a nylon-tipped stick. The 3000 ride that sounded the best was the 20": a good, high-pitched, all-around kind of cymbal with a decent bell and good sustain. This cymbal sounded better with lighter sticks; it got a little washy when played with heavier models. Not quite so good was the 21" Power Ride. For such
Cymbals

by Adam Budofsky

A heavy cymbal, it didn't have a very strong definition, and tended to wash out all over the place. Considering the size, shape, and weight of this cymbal, the bell sound was surprisingly non-existent.

As an overall characteristic, the 2000 series rides had cleaner sounds and fewer overtones to contend with than the 3000s. If you prefer this type of sound, you would probably like the 2000 Power Ride, which had a nice shimmer but also featured a clear ping sound. The 22" ride had a pitch similar to that of the 20" Power Ride, but with more shimmer and a better bell. Neither one of these cymbals had a tremendous amount of projection power, but in a mixed situation would probably be more than adequate for most needs.

Crash Cymbals

All of the crashes we tested suggested that Paiste strives to accent high end. This usually resulted in cymbals with a pleasing shimmer and a cutting pitch, but often with less than admirable power. It seems that, especially with some of the 2000 series, penetration and body were lost in order to gain high pitch and sibilance. Consequently, if you are looking for crash cymbals with power and sustain similar to cymbals you have used from other manufacturers, it might be necessary to find a Paiste one or two inches larger than the crash you would normally choose.

In the 2000 line, the 15" thin, 16", and 17" thin crashes all had great, sharp response and a quick decay, and would certainly work well in either a mixed-up situation (again) or an unmiked but quieter music context. The 2000s became more usable, though, as their sizes increased. The 18" Power Crash was a strong-sounding cymbal with an explosive quality, good sustain, and a deep pitch. Even better was the 20" crash. Though 20" crashes might be a bit large for some setups, this cymbal was pretty thin, and had a full-sounding response. It would probably work well in most situations, as it sounded good when played either loudly or softly.

The 3000 series crashes differed from the 2000s in that they generally had longer decays than their same-sized counterparts, and, as we said before, were generally more washy, with more and varied overtones. The 3000 16" thin crash was no exception. Though most 16" crashes have a high pitch and quick decay, this 16" had a fairly long decay. Since it seemed a little heavier than most thin weights, this cymbal could probably hold up to some serious bashing. Some of the overtones might make it inappropriate for certain types of music, but for heavier styles, this might just be the perfect cymbal for you. Like the 16", the 17" 3000 crash and 18" thin crash were deeper, melower, more varied-sounding cymbals than the 2000s of the same sizes, with the 18" having a bit more choked and lower-pitched sound than the 2000 18" Power Crash.

China-types

Paiste sent us four China-type cymbals to test: The 2000 series 18" China and 20" Mellow China, and the 3000 series 18" Novo China-type and 20" China-type. The 2000 18" could be used as a ride cymbal, but probably only on quarter- or 8th-note ride patterns. It would probably be better suited as a crash, though, because it had a good amount of sustain and a nice, piercing tone. The 2000 20" Mellow China would work perfectly in a small jazz setting. This cymbal's stick definition and low tone gave it a wonderful and unique ride sound; as a crash, it was explosive without being overly obnoxious (as many China-types can be). In the 3000 line, Paiste's Novo China represents a relatively new cymbal design. It has the same shape as a "normal" China, except for its bell, which is about the size of a ride cymbal bell and is pointed in the opposite direction of other Chinas'. According to Paiste, this design allows one to play on the bell. But even though the bell on our test cymbal was quite large, its sound wasn't all that clear. Also, since the bell points in the same direction as the bevel of the cymbal, we found it difficult to strike, since you have to play down and into the center of the cymbal. Aside from the problem with the bell, though, this was a very good-sounding cymbal. It was loud and cutting, with a fair amount of sustain, and would probably be better-suited for crashing purposes than for riding. The 3000 20" China was also a good crashing cymbal, without too much sustain. It also worked quite well as a ride—better for more intricate ride patterns than, say, the 2000 18" would be.

Splash and Bell Cymbals

Now here are some great little cymbals. Splash cymbals aren't usually much to get real excited about, but Paiste's were sharp, cutting cymbals with good tonal colors. We tested 8" and 10" splashes in the 3000 line and 10" and 12" splashes in the 2000 line. Once again, the 3000 series tended to have more overtones.

Similar in appearance to—yet worlds apart in sound from—the splashes is Paiste's 3000 series 8" Bell cymbal. A very loud cymbal with a high, distinct sound, and a lot of sustain, this cymbal produced a sound very reminiscent of crotales. Obviously, you're not going to find an infinite number of possibilities for this cymbal, but still, it's a unique and interesting sound.

Summary

Paiste cymbals have always been looked at as an "alternative" to other major cymbal brands; they have a sound all their own and don't try to mimic other lines. Drummers, being the protective kind that they are, tend to develop a loyalty toward whatever brands they like best, and are often hesitant to experiment with new lines. (The price of cymbals is equally responsible for this reluctance, to be sure.) In all honesty, some of the editorial staff here are just that way. Yet those very people were, on the whole, pleasantly surprised at the performance of these Paistes, to the point where we agreed that many of the cymbals reviewed here would work quite well with our own setups.

Making these cymbals even more attractive is Paiste's decision to actually drop the retail prices of their new cymbals to 1986 levels. So if you've ever wanted to take a dip in Paiste waters but were put off by price, this might just be the right time to jump in (or at least go down to your local drumshop and give them a try).

Following are some representative prices from the lines we tested. Within each Paiste line, all ride and crash cymbals of the same diameter list at the same price. (All hi-hats are priced per pair.)

2000 Sound Reflections: 15", $125; 16", $138; 17", $151; 18", $164; 20", $188; 22", $220; 13" hi-hats, $204; 13" Sound Edge hi-hats, $280; 14" hi-hats, $228; 14" Sound Edge hi-hats, $300; 15" hi-hats, $250; 15" Sound Edge hi-hats, $320; 18" China, $214; 20" China, $238; 10" splash, $100; 12" splash, $110.

3000s: 15", $148; 16", $166; 17", $182; 18", $198; 19", $214; 20", $228; 21", $248; 22", $268; 18" China, $253; 20" China, $312; 8" splash and Bell, $110; 10" splash, $120; 13" hi-hats, $246; 13" Sound Edge hi-hats, $340; 14" hi-hats, $246; 14" Sound Edge hi-hats, $370; 15" hi-hats, $296; 15" Sound Edge hi-hats, $400.
They got together for some photos in London recently. No introductions required. When these guys play, the whole world rocks to their rhythm.

It's a matter of teamwork. Tapping the utmost in personal talent and quality instruments. Their cymbals? Sabian, of course. Under the hands of the most exacting drummers, Sabian delivers.

In the studio. On the stage. A sound heard round the world. It's the shimmer of pure cast bronze. The enduring excellence of centuries-old craftsmanship. The exciting sound of today's music. And it makes a big difference...to Phil Collins and Chester Thompson.

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Drum Machine Reference Chart

Trying to decide which drum machine to buy can be a nerve-wracking experience. Money doesn't grow on trees, and drum machines aren't free. If you're going to plunk down a few hundred to a few thousand dollars, it is important that you get a machine that is going to make you happy, both now and in the future. Not all drum machines are created equal. There is always some sort of trade-off that occurs between features and price. Everyone wants a lot of features at a reasonable cost, and today's manufacturers produce a variety of units that can fit different budgets and have various features.

The purpose of this chart is to help you decide which machine will best serve your needs. I would like to add a few words of warning and friendly advice, though: The sounds included with the machine should be a very important factor in your decision-making process. If you don't like the sound of the hi-hat cymbals on the unit, you're going to be very unhappy. There is no completely accurate way to describe a unit's sounds via the written word. You simply must listen to all the machines that you are going to consider. (After all, you wouldn't buy a pair of stereo speakers from a verbal description without hearing them yourself.) But internal sounds alone do not a drum machine make! You don't want to have to push 27 different buttons just to program the machine in a meter other than common time. It's difficult to say whether or not a machine is user-friendly. What may seem quite difficult to me may be very easy to you. The best thing to do is go to your local music store, or visit a friend who has the machine, and have them show you how to do certain things (change meter or tempo, load in different sounds, etc.). If you get the hang of it pretty fast, consider it friendly.

"So," you may be asking, "if I have to get my hands and ears on the machines before I decide which one to buy, what am I reading this article for?" Well, with luck, you can use the chart to determine a starting point for your hands/ears-on adventures. If you do a lot of syncing to tape, you may want to consider a machine that includes SMPTE read and write capabilities. If stereo playback is critical to your needs, then the chart will show you which machines have only a mono-mix output. If you do a lot of studio work, you might only consider those machines with eight or more individual outputs. If you've got a headphone jack on your mixer, amplifier, and tape deck, do you really need to have another one on your drum machine? Would your MIDI setup require that your drum machine have a MIDI-Thru port included? Do you think that you will need to tune your drum sounds over a large pitch range? Is it absolutely necessary that you be able to program the machine's dynamics from the front panel? Do you want a sampling drum machine, or do you already own a $300,000.00 Fairlight?

I suggest that you look through the chart and make a wishlist of the features that you require now, and think about what you may need in the future. Then try to walk that fine line between the features that you want and the amount of money that you have to spend.

UNIT: This should be pretty obvious. (By the way, due to the ever-changing nature of the electronics field—and the time constraints of magazine publication—certain new models have come into production since this chart was prepared, and thus could not be included. Notable new machines worth checking out are the Yamaha RX120 and Roland R8.)

PRICE: Suggested retail price at the time of this printing. In some cases, the machine is no longer in production. Whenever possible, the price at the time the machine was discontinued by the manufacturer is shown. This information is included because you may find a used unit, or one in the back of a store somewhere. Where no information on pricing was obtainable by press time, a notation of "N/A" is given.

SAMPLE: Samplers let you turn any kind of sound into a drum machine voice. Would you like to add a set of boo-bams or a piccolo snare to your machine? Sample them! (Where possible, the fastest available sampling rate and the machine's sampling resolution are shown.)

SEQ.: This is the largest number of possible sequences that the machine can handle. Don't forget that you may run out of memory before you run out of sequence positions.

SNG.: An indication of the largest number of possible songs that the machine can support.

MARKER: A unit that has markers can move forward or backward to the selected marker in an instant. Useful for finding the chorus or bridge quickly.

SPP: This stands for Song Position Pointer. These are MIDI commands that let MIDI devices know where they are within a song. Some units that have SPP will respond to and send these messages, while others only recognize them.

SYNC.: The different types of synchronization that the machine will read. F = Frequency Shift Key, P = a gate-type clock or voltage trigger signal, S = SMPTE Time Code, M = MIDI clocks, D = DIN sync, and MTC = MIDI Time Code.
<table>
<thead>
<tr>
<th>KEY</th>
<th>100</th>
<th>102</th>
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<th>112</th>
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**Note:** The table above represents a key with various entries, each having different values and attributes such as YES, NO, or specific numbers. The entries are likely part of a larger data set or table, but without additional context, it's difficult to provide a more detailed explanation.
SMPTE WRITE: Some drum machines can generate the SMPTE time code to stripe a tape. This saves having to buy an external SMPTE generator/reader.

SAVES: How does the unit save its information? Disk = internal disk, Cass = cassette, Bulk = MIDI bulk data dump, SYSEX = system exclusive commands, Cart = cartridge, Card = memory card.

KEYPAD: Does the machine have a numeric keypad for entering your data and commands?

UP/DOWN: Does the machine have a set of increment and decrement buttons for ease in programming?

PADS: The number of instrument pads on the unit. A machine that supports multiple banks will look like "8X2." This will have eight different play buttons with a switch to choose between two banks of sounds.

SOUNDS: The number of different sounds that are "on board" at one time.

VELOCITY: An indication that the pads on the front panel are velocity sensitive.

AFT.T.: The unit will respond to MIDI after-touch commands to change some parameter of the sound (most often volume).

NOTE REP.: A note repeat button will let you play a continuous string of attacks at the auto-correct timing level. A speedy way to program rolls and tom-tom fills.

TAP TEMP.: A tap button will let you program a tempo simply by tapping the button. Software inside the unit computes the amount of time between taps and enters the result as the metronomic marking.

MULTIPITCH: Is it possible to have the different play buttons all triggering the same sound, but at different pitch levels? This is a very fast way to program multiple tom fills or even an electric bass line.

MULTILEVEL: Is it possible to have the different play buttons all triggering the same sound, but with different dynamic levels?

AUTO CORRECT: The various levels of auto correct that the machine will support. 2 = half notes, 4 = quarter notes, 6 = quarter-note triplets, 8 = 8th notes, 12 = 8th-note triplets, 16 = 16th notes, 24 = 16th triplets, 32 = 32nd notes, 48 = 32nd triplets, 96 or above = high resolution.

MET. STEP: The different rates of the metronome's click sound. This column uses the same abbreviations as the auto-correct column.

TEMPO RATE: The slowest and fastest metronomic markings available on the drum machine.
TEMP. CHG.: Does the drum machine let you program tempo changes as part of the song? This can enhance the machine's ability to sound more human.

SWING: Given as a percentage, the various levels of swing that the machine supports.

TIME SHIFT: Oh no, the downbeat is in the wrong place! Units that support time shifting can slide an entire sequence over to begin on a different beat or portion of a beat.

ST. PAN: On devices with stereo output, the number of different positions within the stereo field.

MIX: A yes in this column means that the unit will let you mix different output levels for each instrument. This is different than simply having programmable velocity, as it lets the user determine the relative volume of each sound.

AUTOMIX: If yes, then the different programmable mixes may be called up and inserted in song mode like a "semi-automated" mixing console.

OUTS: The number of individual audio outputs and stereo outputs are listed in this column. The notation of HP stands for headphones. A marking of 8/2/HP would show that this machine has eight individual outputs, a set of stereo outputs, and a headphone jack.

PORTS: The number and type of MIDI ports contained on the unit. I stands for MIDI-In, O stands for MIDI-Out, and T indicates MIDI-Thru ports.

ASSIGN IN: This feature will let the programmer assign any sound to any MIDI note number so that the drum machine’s sounds can be programmed by any other MIDI controller.

ASSIGN OUT: Like the feature above, except that you are assigning which note numbers the drum machine will send. This is very useful for using your drum machine to trigger a sampler or some other external sound source.

TRIGG. IN: The ability of the drum machine to play one or more of its sounds from an external trigger's voltage.

TRIGG. OUT: The drum machine will send a voltage to trigger a sound on the other machine. This can be useful if you need to incorporate non-MIDI devices into your system.

SPECIAL FEATURES: Look for all types of groovy additional features in this slot.
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On/Off Switch</td>
<td>Allows the device to be turned on or off</td>
</tr>
<tr>
<td>Volume Control</td>
<td>Adjusts the output level of the device</td>
</tr>
<tr>
<td>Display Screen</td>
<td>Shows various information and settings</td>
</tr>
<tr>
<td>Connectivity Options</td>
<td>Various connections such as USB, Bluetooth, etc.</td>
</tr>
<tr>
<td>Power Source</td>
<td>Indicates whether the device is battery or mains powered</td>
</tr>
<tr>
<td>Accessibility Features</td>
<td>Options for improved usability for users with disabilities</td>
</tr>
</tbody>
</table>

**Key**
- CN: China
- US: USA
- UK: UK
- EU: European Union
- ASIA: Asia
- AO: Asia-Oceania
- AF: Africa
- AM: Australia-Melanesia
- SA: South America
- NA: North America

**Special Features**
- Wireless Charging
- Waterproof Design
- Voice Recognition
- Fitness Tracking
- Customizable UI

**Additional Information**
- Battery Life: 12 hours
- Water Resistance: 50 meters
- Compatibility: Android/iOS
- Dimensions: 10x3x2 cm
- Weight: 100 g
Triggering electronic sounds from acoustic drums is a concept that has been around since the idea of combining percussion and electronics first began, largely because electronic drums don't feel or react like their acoustic counterparts. Although many manufacturers claim that their products—which were originally designed for pads—can also be triggered from piezos (devices that turn vibration into electric energy), anyone who's tried will tell you it's no easy proposition. This is because the signal that comes from a trigger riding on an acoustic drum is very different from that which comes from a pad. Hit a pad that's not plugged in, and you generate very little sound. That's good, because when it is plugged in, you're supposed to hear the electronic sound and not the pad itself.

It just so happens, though, that there's another important reason for this quiet quality: A pad vibrates very little after being struck; consequently, it creates only spike of electricity per strike of the pad. An acoustic drum, on the other hand, vibrates a lot after being struck. (If it didn't, you'd have a pretty lousy-sounding kit.) After all, that's what sound is: vibration.) So a trigger situated on a drum can put out quite a number of spikes for each hit. Computers—which most drum brains are—can only think so fast. The faster they think, the more expensive they are, so manufacturers make them capable of tracking just faster than people can possibly play. (A good drummer can play a press roll at approximately 33 hits per second.) When you have the sensitivity up while triggering from acoustic drums, multiple triggering often occurs. This is the result of drum brains attempting to read not only every note you play, but each vibration of the drumhead as well. It is possible to turn the sensitivity down so that the brain won't hear the extra vibrations, but then you'll lose some of the lighter hits, such as double-stroke rolls.

In order to achieve the most accurate triggering possible, the idea is to make the signal from a trigger resemble that of a pad as closely as possible. So far there are two ways of tackling this problem: the mechanical way, and the electronic way. (One manufacturer is working on a hybrid system, but more on that later.) As you might have guessed, the mechanical way is cheaper, so let's deal with it first.

Mechanical Adjustments

Placement of the sensor is a big part of the game, because a drumhead vibrates a lot more toward the center than near the edge. About an inch from the rim is a good place to start. Ultimately, your playing style and the output of the trigger will determine placement. If you play hard and use a large piezo element (the larger the element, the hotter the signal), putting the trigger very near the edge will work. It doesn't matter to the trigger whether you stick it on top of or underneath the head. But if you put it underneath, you may inadvertently make a direct hit, and boom—either you damage the trigger or the audience gets a headache. Some triggers have dog-ears for attaching directly to the inside of the shell. You can usually get away with this if you're a particularly hard hitter or if you find that placing the sensor directly on the head results in its being much too sensitive. In this case, try fastening the trigger near the rim. If you use bottom heads, just run the trigger wire out through the breather hole.

The adhesive you use certainly makes a difference. Certain substances, like sticky putty or double-sided foam tape, can decouple the element from the head, creating a whiplash effect that can cause double-triggering. Closed-cell neoprene rubber tape with high-tack butyl rubber adhesive seems to do the trick quite nicely, and some manufacturers (such as Phi-Tech and MIDI Drum, Inc.) have begun to include a piece of it with their triggers and to offer it in replacement packs. You can recognize it easily, because it's black and very dense (not spongy). A thin coat of silicon glue will also do the job rather well in most situations, but you must allow it to dry for about an hour. You can still remove the sensor when you change heads, but it's not something you're going to want to do after each gig.

As I mentioned earlier, the size of the trigger dictates the amount of voltage that the element puts out when stressed. Since manufacturers have not standardized the amount of voltage each of their drum brains takes to get maximum volume (some put out top velocity at 2-3 volts, others at 5-7), it's advisable to make sure the trigger used is compatible with the brain. Obviously, it's best to try each trigger first. But failing that, you can always adjust the output by "padding" (reducing) the signal if it's too hot. (If the signal is too weak, only amplification will help.) Padding can be accomplished by placing a resistor across the input to the drum brain; the more resistance, the less padding effect. So if you need to pad the signal a lot, use, say, a 500-ohm resistor. To pad the signal down a little, use around a 10,000-ohm resistor. By the way, a 1/4-watt resistor will be small enough to fit inside the jack of the cable, which makes for a neat operation. (Figure 1.) You can also use a 10k linear potentiometer to adjust the signal coming off the trigger. (Figure 2.) In this way, you can be ready to trigger just about any drum brain simply by turning the pot up or down to adjust the output of the trigger. One manufacturer that builds this feature directly into the 1/4-inch jack on their SC-10 drum sensor is Trigger Perfect. If you find yourself triggering lots of different types of drum brains, perhaps this is the one for you.
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The Best Pedals.

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Electronic Adjustments

If the mechanical means of adjusting the output of drum transducers seems tedious and time-consuming to you, you’re right, it is. Sometimes you may luck out and get a good triggering situation without much effort. But more often than not, it will take time and patience to get the job done. Take heart, though: The computer has come to the rescue and can do all the dirty work for you! Next, we discuss the new (and more expensive) methods of cleanly and accurately triggering from acoustic drums.

The Marc MX-1, Simmons MTM, Yamaha PMC-1 (and indeed all drum brains with features designed to electronically condition the signal from a trigger) have all used methods that change the size and shape of the spike before the signal is either translated to MIDI or just sent to the ‘‘Trigger In’’ on a drum brain. (These are some of the devices that can beef up the signal if your sensor puts out too weak a signal.) Waiting a certain number of milliseconds before allowing another trigger impulse through has basically been the only system used (with some variations) to solve the problem of generating one clean spike per hit of the drum...till now.

Finally, a breakthrough notion: What about teaching a computer what the signal looks like when the stick hits the drum, so that it can learn to ignore all the extra vibrations and extraneous noises (like the lead singer who just can’t resist stomping around near your bass drum) that always occur while drummers play? After all, it’s easy for people to tell the difference between when a drum is hit and when it’s just vibrating after the fact. Well, a couple of manufacturers have found a way to teach that kind of smarts to the computers on board their drum brains. Both Simmons and Kat Controllers, for instance, have developed just such computer algorithms (Simmons calls theirs a “learn” function), which take a digital snapshot of the incoming signal, and use this profile to recognize the same signal again. Simmons offers this feature on their Portakit and Trixer, while Kat Controllers makes this sophisticated triggering system available in their drumKat. These devices are packed with other features, so, as you might expect, they are not cheap. But since this system works so well and is so easy to use, you can be sure that there will be other products of this nature (if there aren’t already) with fewer features and at lower costs.

Drum Workshop has a new means for triggering that could be considered a hybrid electronic and mechanical system. Their new AT-1 (for toms) and ATS-1 (for the snare drum) replace a drum’s lug. Using the vibrations from the tension rod and shell to monitor what’s played, these devices electronically convert those vibrations to a usable spike that can then be translated to MIDI or sent directly to the trigger input on a drum synth.

For triggering and miking drums simultaneously, there are two new products available: the Drum Wizard, by CT Audio, and the previously mentioned Trixer, by Simmons. The Drum Wizard comes complete with the familiar C-ducer tape transducers that CT Audio uses in their other audio products. These tapes are either fastened to the shell of the drum using double-sided adhesive tape, or are suspended between internal lug screws, and deliver high-quality audio sound through an eight-channel line mixer. There’s a threshold adjustment to eliminate multiple triggers, and the signal can be converted to MIDI and trigger output simultaneously. The Simmons Trixer is capable of using virtually any type of mic’, due to its “Learn” function. This system is also an eight-channel mixer, but contains digital drum samples (four drumkits) as well as eight different reverbs on board, and can convert incoming signals to MIDI.

As you can see, there are many options available now to drummers who wish to incorporate today’s new electronic sounds into their kits. Triggering from acoustic drums opens up a wide range of sonic possibilities. But be prepared for something you may not have expected to happen: The drumset you have played for years suddenly becomes a different instrument, and as such must be approached differently to be effective. A basic rule of thumb is to spend just as much time setting up your electronics as you do your acoustic drums, and then get set for a totally new musical environment. Happy triggering!
"I'm using Shure's SM98 more and more because it helps me get that natural drum sound and the mic adds no 'color' of its own. Its small size doesn't obscure the audience's view of the drummer and means the mic is less likely to get hit by drumsticks.

I prefer the warm natural sound you get with condensers. That's why I like the rich lows and low-mids I get with the SM98 on tom-toms. Plus it's rugged enough to stand up to road abuse.

To get the fat sound I want, I position the mic about three fingers distance off the drum head and aim it toward the center to avoid unwanted rim harmonics.

To minimize leakage from adjacent drums, I use Shure's A98SPM polar modifiers to get the isolation a supercardioid provides. I've found that combination works great overhead on the high hat as well. With the pattern control the modifiers provide, it's like having two mics in one.

For area miking of percussion instruments, I prefer the SM81 because of its extended flat frequency response. And the SM57 still is my first choice on snare and guitar amps."

If you're looking for answers to your miking problems, start where David Morgan does—with Shure.

Call for a free copy of Shure's full line Microphone/Circuitry Catalog. Call 1-800-257-4873 (in Illinois 1-800-624-8522).
Changing The Feel

by Glen Bush

Whether you are playing a chart for the first time or learning a tune by ear, you don't want to get locked into playing the same feel for the length of the tune. Changing the rhythmic feel of a tune at the right spots, such as the bridge and solo sections, can add excitement and tension to the tune. What you don't want to do, however, is change the feel at random, because this will make the tune sound disjointed and sloppy. The key is knowing how and when to alter the feel.

There are two easy methods for changing the feel of a pattern without really altering its basic rhythmic structure. The first method is to open up your hi-hat either on the "and" of beat 1 and 3 or on the "and" of each beat. Look at the following funk pattern.

Now, just open the hi-hat on the "and" of each beat.

Notice that the basic rhythmic feel is still there, but now the pattern has a double-time feel to it. You don't have to restrict the open hi-hat to just the upbeats. You could open it on the downbeat or on a 16th note before or after the beat.

The bass and snare parts in the next example are the same as before, except now you have a more open sound created by the ride cymbal. Notice that the upbeat feel is still there because of the hi-hat. As before, don't restrict yourself to just the upbeats or downbeats on the hi-hat or ride cymbal. The basic idea is to make a consistent change that will continue until the beginning of the next phrase. When moving from the hi-hat to the ride cymbal, keep the basic rhythmic structure of the pattern the same. This will ensure that you will stay compatible with the rest of the group throughout the tune.

Now that you know how to modify a pattern to make it more open and busy, you need to know when to change the feel. A good rule to follow is to only change the feel at the beginning of a phrase, never in the middle. There are two easily identifiable phrases in a tune that are good spots to change the feel. The first is the bridge or interlude phrase after the initial melody verse. On the bridge or interlude phrase, move to the open hi-hat or ride cymbal. For example, the following pattern is to be played during a 12-bar melody verse.

At the beginning of the eight-bar bridge phrase, change to 16th notes and open your hi-hat on the "and" of each beat.

Then you would go back to the initial pattern when the verse repeats.

The second place to change the feel is during the solo section of a tune. It is easy to fall into the trap of boredom when accompanying long solos. It's hard enough trying to creatively support one soloist, but sometimes a tune will have multiple soloists playing over the same set of chord changes for the same number of measures. If you are not careful, you can end up sounding pretty dull. In this situation, determine the length of the chorus phrase (eight or twelve bars) and change the feel at each new phrase. Start the solo off by going back to the initial time pattern you were playing at the beginning of the tune. This will give you and the soloist a foundation on which to build. Then, at the beginning of each new phrase, progressively alter the feel, using both volume and rhythmic content, so that it builds towards the end of the solo.
As before, you can start off by using the open hi-hat and then move to the ride cymbal, or even incorporate the toms into the pattern.

For an example of this, let's say a tune calls for two 24-bar solos—one for a sax and the other for a guitar. First, break each 24-bar solo into three 8-bar phrases. Starting with the first eight bars, play your original feel.

Then, add your open hi-hat on the upbeats for the next phrase.

Next, add some ride cymbal notes for the last phrase.

When playing through these patterns, be sure to insert one- or two-bar fills at the end of each phrase. Repeat the whole process for the guitar solo.

Let's look at another example, using a samba pattern. Start with your basic pattern.

This time, instead of opening your hi-hat, add a tom note on the “and” of four.

Then add the ride cymbal and the open hi-hat.

The tom note in the second phrase will serve the same purpose as the hi-hat did in our first example. Remember, you just want to break up the pattern a little each time.

You can apply the same phrase principles to bebop or swing tunes. For example, during the solo sections, start off by playing basic time. Then for the next phrase, add a cross-stick rimshot on beats 2 and 4 while keeping straight time on the ride cymbal, like you would in a bossa-nova pattern. For the last phrase, go back to the snare drum and play with more intensity than you did at the beginning of the solo, continuing to build to the end of the chorus.

Before you play a tune, learn how it is put together. Does the tune have an intro phrase or a solo section? If so, how long are the phrases? Make sure that what you are playing fits with the basic rhythmic feel of the tune and that you only change your feel at the beginning of a new phrase.
Let's get right to the point: Simmons has made a major advance in electronic drums. That shouldn't come as too big a surprise; after all, it was Simmons who proved that electronic drums could be more than Syndrum/Synare-type sound effects, and who have to be given the credit for producing the first viable alternative to an acoustic drumset.

But even though Dave Simmons was the original pioneer in this area, that was no guarantee that his company would continue to stay on the leading edge. Historically, after a small company has developed a new idea and proven that it can work, it is common for much larger companies to come along and use their considerable resources to develop that idea in a way that the original company can't begin to compete with. This is especially true in the electronics field, where there is a constant demand for new and better products. So it would have been no big surprise if someone other than Simmons had made the next big leap.

But since Simmons have dedicated themselves exclusively to the idea of electronic drums, and received their share of hostile criticism for their trouble, then perhaps it is only fair that they should continue to be the major innovator in the field. And the SDX is truly a major innovation.

In this review, we are going to dispense with some of the usual details—such as how the pads are constructed, the dimensions and weight of the kit, and step-by-step descriptions of how to program it—and concentrate on what it does and why it is significant.

The Computer

The single most important feature of the SDX is that it is based around a computer. While that might seem intimidating to some people, it has the potential of eliminating one of the biggest problems with electronic drums: obsolescence. Let's look at that in terms of electronic drumsets and personal computers.

The first significant electronic drumset was the SDSV. A lot of drummers bought them, and at the time, they were the state of the art. Then came the SDS7, which had a number of major improvements. The trouble was, even though some of the general characteristics were the same, the basic architecture was different—software-based memory as opposed to manual controls. If you wanted the improvements, you couldn't simply upgrade your SDSV; you had to purchase a new instrument. A similar thing happened a couple of years later with the SDS9. It's no wonder that a lot of drummers got fed up with the idea of electronics.

Let's compare that situation with personal computers. Several years ago, Modern Drummer bought a couple of Macintosh computers. At the time, we were amazed by all of the things they could do, but improvements were being made constantly. Suffice to say that now we can do so much more, but we are still able to use the same computers we bought four years ago. Yes, we've spent money on various new programs, and at one point we invested in memory upgrades for the computers themselves. But all of that was minor compared to what it would have cost to buy a whole new computer every time there was an improvement of some sort.

Applying that idea to electronic drums, suppose that the SDSV had been computer based, and that the SDS7 and SDS9 improvements could have been offered as software updates. We dare say that more people would be using electronic drums today. Well, Simmons can't do anything about the past, but they seem to be thinking ahead to the future. Even in the few months that the SDX has been available, several upgrades have been made, and more are promised. It's conceivable that the SDX will be the last electronic drumset that a lot of drummers will have to buy. After that, they can simply upgrade the software. So although the SDX has a pretty hefty price tag, in the long run, drummers might end up spending less than they would if they had to completely replace their system every two or three years.

The SDX console is set up somewhat like a cross between a Macintosh computer and a drum machine. The most obvious feature is the 9" monitor screen, which is controlled by a tracker ball (sort of like the mouse on the Mac). There is also a slot that holds 3.5" floppy disks (again, like the disks on a Mac), and there are 16 keypads. The keypads can be set for various functions: each one can be a different drum; each one can be a different dynamic for a single drum; or each one can be assigned to call up a different kit. It is possible to completely program and play back the SDX just from the console, without using any drumpads. In that sense, the SDX can function as a drum machine.

Everything is done on the screen, from selecting kits to editing sounds to mixing. While the idea of having to use a computer might be discouraging to some, the SDX is very user friendly. The graphic displays are logical and easy to use, and there are "help" commands available for every step of every application. As an example of the SDX logic, the mixing screen is set up to resemble a real mixing deck, and you use the tracker ball to "move" the various controls the same way you would on an actual mixer.

Another interesting feature of the SDX is the automatic trigger. In order to program most electronic drums, you are forced to tap on a pad with one hand while you adjust controls with the other hand. The SDX will play itself while you are programming it. You can have it play only the pad you are working on, or you can have it play other pads as well so that you can hear how everything is blending together.
Simmons SDX

The automatic trigger is very easy to set up, and it can save a lot of time while you are programming.

**Zone Intelligence**

The next significant feature of the SDX involves Zone Intelligent pads. Basically, this means that you can get different sounds from different areas of the pads. You can also generate different sounds according to how hard you hit the pad—and I mean different sounds, not just different volumes.

Obviously, this is something that has been lacking on electronic drums. Everyone knows that on an acoustic snare drum you can get a lot of different sounds. The center of the drum doesn't sound like the edge of the drum, and the center of the drum struck hard doesn't sound like the center of the drum struck softly. But with electronic pads, you were stuck with the same sound no matter where you struck the pad. The best you could hope for was that the pad was velocity sensitive so you could get dynamics.

But Simmons has come up with pads that are capable of holding nine different samples: three different striking areas on the pad, times three dynamic levels on each area. Let's look a little more specifically at how this works.

Going back to our acoustic snare drum example, let's designate three areas of the head: center, off-center (the area between the center and the edge), and edge. Within each of those areas, we can designate three dynamic levels: soft, medium, and hard.

With the SDX, you can sample each of those sounds from an acoustic drum and assign it to your snare drum pad. The significant thing about these dynamic levels is that you're not just playing the same sample at different volumes; you are actually triggering different samples. In other words, when you hit an acoustic drum in the center with a soft stroke, and then hit it in the same place with a loud stroke, the difference isn't just the volume. It's also the timbre. It's the ability to assign three different timbres of the same sound that makes the SDX the closest thing to acoustic drums yet.

The above example of sampling nine different sounds from the same drum and assigning those sounds to corresponding areas of an SDX pad represents only one way of using the Zone Intelligence. Theoretically, you could have nine totally unrelated sounds assigned to a single pad. For example, the edge struck soft could be a bass drum; the edge struck medium could be a woodblock; the edge struck hard could be a cymbal; the off-center area struck soft could be a snare drum; the off-center area struck medium could be a conga; the off-center area struck hard could be a cowbell; the center struck soft could be a tom-tom; the center struck medium could be a hi-hat; the center struck hard could be a handclap. That's theoretically. Practically, it would take an incredible amount of control to be able to access those sounds consistently.

Even with the snare drum example, you might not want all nine of the snare drum samples. Again, you would have trouble accessing all nine of them consistently anyway. You might want to limit your options to three samples: a soft sound, a medium sound, and a loud sound. You would have your choice as to how you controlled those sounds. If you wanted to control them simply by how hard you hit the pad, you would assign the soft sound to all three areas at the soft dynamic, the medium sound to all three areas at the medium dynamic, and the loud sound to all three areas at the hard dynamic. If you would rather access the three sounds by where you hit the pad, you could assign the soft sound to all three dynamics on the edge, the medium sound to all three dynamics in the off-center area, and the loud sound to all three dynamics in the center.

The point is, you have a lot of options, from assigning the same sample to the entire pad—so that no matter where you hit it or how hard, you get the same sound—to assigning nine different samples—as described above—to everything in between. We found that, for most applications, four or five samples per pad gave us a nice balance between being able to approximate an acoustic drum and being able to control the sounds consistently. One application for which we favored all nine samples, however, was a ride cymbal. Even though it was difficult to control all nine samples consistently, by having all of those cymbal sounds on the same pad, we were able to approximate the sound of an actual cymbal very nicely when playing jazz patterns. It's all of those little differences in timbre and volume that distinguish an acoustic instrument from the sterile sounds of most electronic instruments, but the SDX can give you a lot of variety in that respect.

We should mention a few other things, such as the fact that each of the dynamic samples is dynamically sensitive within itself. In other words, let's say you are playing the off-center area of the pad at the medium dynamic. You can get louder and softer within that dynamic. If you get too loud, you will move into the loud dynamic area, and if you get too soft, you will move into the soft area. But you can adjust the points at which that happens. For example, you can set it to where the medium area is fairly large, so that you only get into the
The Sounds

A number of "sound disks" are supplied with the SDX, and more are becoming available all the time. The sounds are organized into "kits" that have names such as "rock," "jazz," "ambient," "dry," etc. But it is possible to put any sound into any kit, or to make up new kits from a variety of sounds. With the potential for editing the existing sounds, one has a tremendous number of possibilities right off the bat. Also, the sounds can be assigned anywhere on any pad. For example, you could construct a tom pad from three (or more) different toms, according to the zone-intelligence principles outlined above.

The sounds are all digital samples, and the SDX is 16-voice polyphonic, which basically means that you don't have to worry about that "machine-gun" effect that you can often get from electronic drums when the sound has to start over every time you hit a pad, thereby cutting off the previous sound. By being able to assign more than one voice to a single sound, this is avoided. Let's look at this in terms of a ride cymbal. When you hit a note on an acoustic cymbal, it rings for a couple of seconds. With most ride patterns, you will be striking the second note while the first note is still ringing. But with a lot of electronic drums and drum machines, every time you strike the cymbal sound, it first cuts off the previous sound, giving an unnatural effect. However, the SDX lets you assign more than one voice to a sound, so that while the first voice is letting the first strike decay, the second voice is starting the second strike, and so on.

The 16 voices can be spread out over the entire kit, and different pads can share the same voices. For a short sound such as a bass drum, you might only need one voice. For a fat snare drum, you might want two voices, especially if you wanted to play flams. For buzz rolls, you might want four or five voices. A cymbal might require three voices. But all of the toms could be assigned to the same eight voices, which would make it possible to play fairly fast fills around the toms without any of the notes being cut off. In addition, there is a "voice-robbing" feature that comes into play if the SDX does have to stop a voice to start a new one. The machine automatically shuts off the voice with the lowest volume, which means that you probably wouldn't hear it stop.

Added to that is a feature called Velocity Start Point, which lets you program a sample so that it starts from different points in its cycle, depending on the velocity with which it is struck. That is especially useful with cymbal samples, and is another way that the SDX overcomes the problem of machine-like sounds.

Sampling

The other major highlight of the SDX is its 16-bit sampling at a sample rate of 44.1 kHZ, which is the standard for compact discs. The overall process is easier than with most samplers on the market, and once the sample is recorded, there is a variety of ways to alter the raw sample by editing its various envelopes. The end result is that there is no limit to the sounds you can come up with for the SDX.

Quite honestly, sampling is not for everyone. While the SDX sampler is easy to use, sampling itself is an art, and at best it takes a lot of time and patience. While some players enjoy having the ability to customize their own sounds, a lot of other players would prefer to concentrate on playing and let someone else create the sounds. (Chick Corea, for example, hires a synth programmer, leaving Chick free to play and compose.) By the same token, many of the people who specialize in sampling and programming are not players at all.

By virtue of its sampler, then, the SDX is not for drummers who are only interested in playing. A lot of the money you would be spending on the SDX is for features—such as the sampler—that let you create new sounds. To have that technology and not use it would be a waste. Those who want access to a lot of different sounds but...
who do not want to invest the time necessary for sampling their own would be better off with something like an Akai S-900, for which a huge library of sounds exists.

**The Price**

The basic SDX 10-piece kit has a suggested list price of $9,990.00. It includes the standard console with two megabytes of RAM, one bass drum pad, one snare drum pad, four tom pads, one hi-hat system, three Symbal pads, and cables. If you want stands for all of that stuff, the console stand will cost another $399.00, and the 10-piece drum rack will cost $634.00.

If you just want the basic console by itself, you can buy one for $7,960.00. You can also buy memory upgrades for the console. A two-megabyte RAM expansion costs $900.00. The unit starts out with two, and you can add on up to six, for a total of eight megabytes of RAM. If that's not enough, you can have a hard disk factory-installed for $1,750.00, which will give you 20 megabytes.

**Things To Come**

Simmons recently sent out a free software update that allows the SDX to serve as a keyboard sampler. The next promised major upgrade will enable the SDX to function as a very sophisticated sequencer. The sequencer update is expected to sell in the $300.00 range, which isn't much compared to the cost of the basic hardware. When you consider a system that functions as a keyboard sampler, a sequencer, and a complete electronic drum system, the overall price starts to make sense. You are now looking at an instrument in the Fairlight or Synclavier league, but that would actually cost less than those instruments.

There is something else that is likely to happen, even though Simmons has not announced anything specific in this area so far, and that is the "trickle down" effect. Essentially, whenever a certain instrument becomes a flagship for a company, smaller versions of that product are usually developed for those who can't afford or simply don't need all of the features of the original instrument.

In the case of the SDX, a logical next step would be some type of "brain" unit that simply reads disks. One could buy a set of the zone-intelligent pads, plug in disks that already contained a variety of sounds and setups, and play. This would be useful for those who are interested in a good electronic drum set, but who would just as soon not get involved in programming and sampling.

Actually, such a unit would also be handy for drummers who have the complete SDX and want to use it in live performance. You wouldn't need to be programming and sampling at the gig; you would merely need to call up the sounds and programs that you set up at home. Taking the current console to a gig would not be especially practical, given its size and weight, not to mention the fact that you wouldn't want to subject such a unit to the hazards of the road or to a typical club atmosphere. But a playback-only unit could be perfect in those situations.

Again, Simmons hasn't announced anything such as this, but if enough people get involved in the SDX, it is most probable that the technology will start to filter down into other, less costly products.

**Conclusions**

While a lot of the features of the SDX are designed to approximate the characteristics of acoustic drums, one should not approach an instrument such as this with the attitude that it is merely an electronic device that is trying to copy an acoustic instrument. Rather, this is an alternative to acoustic drums that must be dealt with on its own terms.

To attempt to put this in a nutshell, an acoustic drumset is a performance instrument only. It can be played, period. Yes, you can record it, but that involves additional equipment such as a tape recorder, microphones, etc. And after you record the performance on tape, there is only so much you can do to it.

You can also perform on the SDX. But in addition, the SDX can digitally record the performance and can then be used to edit that performance—not just the sounds, but the performance itself. And don't forget that the sampler gives you access to virtually any sound, and that you have full mixing capabilities. In short, where an acoustic drumset is simply a musical instrument (and we do not mean to imply that there is anything wrong with that), the SDX is a complete MIDI production unit.

As such, it will be most useful in the studio environment, where control is the name of the game. In fact, we feel that an instrument such as this could help put an end to drummers being replaced by drum machines. In a lot of cases, the reason that a drum machine is used to begin with is that it is easy to make changes anywhere along the line. Sounds and rhythms can be changed at will to fit the track. The machine might not be as expressive as a live drummer, but a lot of producers are willing to sacrifice expression for flexibility. Again, once an acoustic drumset is recorded on tape, very little can be done with it.

But with an instrument such as the SDX, a live drummer can play the track, and because of the zone-intelligent pads and the sophistication of the SDX sampler, the drummer's expression can come through to a much greater degree than is possible on any drum machine. But because the SDX can record that performance digitally, the producer (or the drummer, or whoever) will have the same (or better) control as he would with a drum machine.

So who is this instrument for? It's for drummers who want to create their own identities—drummers who want to use their own samples and have total control over their own performance. It's also for people who are interested in exploring alternatives in musical instruments. Some of these people might not be performers; they might be programmers. But either way, the people who eventually use the SDX are going to be explorers, and it is going to be interesting to hear what they discover.
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thing. What the new thing is saying to us is, doesn't sound as good as it did on the old thing. So they play the same way that the new thing is exactly the same as the old thing. It's exactly the same with the drumset.

Drums should look good. They should be instinctively and emotionally what the difference is, and doesn't play his synthesizer like a piano. That's an example; you hear it a lot. It's exactly the same with the drumset. There are people around who will insist that the new thing is exactly the same as the old thing. So they play the same way on the new thing, and wonder why it doesn't sound as good as it did on the old thing. What the new thing is saying to us is, "I'm offering you the chance to change yourself. Change yourself if you like; but if you don't change yourself, you won't make me sound any good." The most common problem is that people haven't yet understood that, in a subtle way, it's a different instrument. It requires a different thought to get something out of it, a different kind of writing for drums and different expectations from the audience.

People say to me, "Where's the drumming on the Earthworks album?" That's because they can't detect where the drumming is. A lot of the keyboard sounds—the pitched sounds and the analog sounds—are coming from the drumset. So a lot of what the drummer is doing is up for grabs. The audience might have to update what it expects to hear from a drummer. I may not execute my para-triplets in a blazing flurry around the RotoToms anymore; but that's okay, I'm still here. Don't worry, don't get frightened. [laughs]

Take the tune "Industry," which I did with King Crimson: You play a horrendous racket on a metallic-sounding drumset, and someone comes in and says, "That sounds like the death of the Industrial Revolution," so you all decide to build up a composition around those sounds. Good musicians will understand these ideas instantly. There's no problem.

SG: The message here seems to be that electronic drums can revolutionize not just drumming, but music in general.

BB: Yes, I think that this is happening, but there are lots of side issues that people are trying to grapple with, particularly defining the function of a drummer. We have all these received ideas that have been handed down from the '40s and '50s—simple things like always playing time on a cymbal. A lot of the language we use, like "gig" and "rhythm section," dates from that period. Drummers are living in that world, and they are very nervous about being asked to change. Now I've changed my style several times, as a sort of intellectual exercise. And having done that, I can say that it's really not that bad. You just have to wait for people to catch up and stop writing you hate mail, like "Why don't you use that 'pongey' snare drum sound anymore?" or "Why don't you play those tom-tom fills anymore?" You realize that you have temporarily offended people. The role of the drummer is changing, and people are nervous about it. They've practiced their paradiddles, and by God you're going to hear them!

That's just one issue that's flying around. Another, more difficult one, is the remoteness of feel that you get from electronics. Electronics appear to come at you from a very unemotional base. Humans tend to operate on a very primitive basis. The great thing about watching someone hit a drum is that you can feel the power in that drum. I can hit it hard and it goes "BOOM!" It's a great communal thing—a shared experience between the player and the listener. Drums should look good. They should be under big lights, they should always look beautiful. You should see a drummer hit them, and you should hear the sound come out. That is common to a rock gig, a jazz gig, or a classical gig. It's an essential part of communicating with the audience. The difficulty with electronics is that it is all too easy to create a false perception in terms of the weight of sound and the audience can be left with a bad taste in their mouth—feeling robbed, in a way.

I remember going to a Peter Gabriel concert in the early '80s, and coming away with a big feeling of disappointment. There was the drummer, Jerry Marotta, obviously doing a grand job: [mimes] "boom-boom da, boom-boom da." You could see his hands moving and locate that sound; there was no problem with that. But meanwhile the rest of the rhythm was going "dugga-dugga-dugga-dugga," and it was all happening, but you couldn't see anybody actually playing it. So you think, "Is there a tribe of African drummers there, or isn't there? If they are there, I want to see them, I want to feel them play. If they aren't there, why are we hearing them?"

I do feel very strongly that at concert level we must be very careful about letting sequencers run, about using huge sounds that are obviously generated by dropping a little stick from about four inches onto a pad. If it's a big sound, you hit it hard. You defy these basic perceptions at your peril, because if the audience can't relate what they see to what they hear, they won't be satisfied. So with my own electronic work I try to make damn sure that you know that it's flesh and blood playing the stuff. If it's loud, if it's soft, that's the way I'll play it. I want these electronic instruments to respond under the stick. Forget sequencers, forget clicks; we need live push and pull. And if they call it jazz, then jazz it is.

I've been disappointed a number of times: There was Laurie Anderson, who turned up in England with all the drums programmed. She had a couple of male back-up singers, a keyboard player, and herself. There was a big feeling of letdown in the
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auditorium, because there was no shared communality.

SC: There was Luther Vandross, with the band in darkness. They seem to think that an audience is content just to watch somebody singing. It's an illusion that most TV directors seem to suffer from, too.

BB: Exactly! And I think that they are robbing themselves of a very exciting and immediate visual image, which is watching a drummer play. It's a fantastic thing to watch, because that's where the pulse of the music comes from. It goes all the way back to Gene Krupa. But today the drummer has got an awful lot more beneath his sticks. The fact that you can play a pad and it can be any sound at any time was a very seductive idea at the beginning of the '80s. Manufacturers' press releases said that it would happen, and it has taken a while, but now it is actually the case.

I have ten or so pads, and they can be the sound of anything at any time. More than that, you can bend and shape the sounds under the stick, because the computer will react to the way you are striking the pad. I've found it very exciting. It's pretty different from acoustic drumming. For example, a lot of the time I'm playing chords off these things, and I begin to feel that I'm not an acoustic drummer anymore. I love acoustic—they're fantastic—but what I do with the electronics gives me a different feeling. It's nice! I'd like to take it further; it's only a lack of courage that makes me hold on to old ideas. But it's only a matter of time.

SG: Are you saying that you've got ideas for the way things might develop, but you are reluctant to put them into practice?

BB: Oh sure! I'm human; I like security in established things. I want a snare drum. [laughs] I did two or three years without a hi-hat, and it's not easy! I am attached to ideas from the past, but as I said before, I see my job as finding out about the way things are going to go. There are plenty of other people who do a very good job of keeping existing ideas alive.

There's an economic function to all this, too. The sort of things we're talking about cost a lot of money. When we talk about computers holding sound, that's expensive. Technical assistance costs money. It's likely that a lot of your readers imagine that I'm swimming in money, and I can afford anything I want. Well, that's not actually true. I do all my own programming and a lot of it is shoe-string budget stuff; a lot of it is done the wrong way. Also, electronics can give up on you. That's what they do. Once in a while you have a problem. You must learn how to fix it, or play something else.

There's the economics of time spent in studios as well: If you have several days in a recording studio to try various options and variables—of which there are hundreds of thousands now—then you'll get a better shot at what you're doing. If you are asked to go in there and make an album with electronic percussion in two days, it's very complicated. Your choices are immediately reduced. You watch the clock on the wall, and you have a hunch that program three might be better than program two, but there is no time to try it. So you just have to dive in and do it as it is. That was the nature of the David Torn album I did. It was for ECM records, done essentially in two days. I'm driving MIDI from a Simmons drumset, and it's complicated; there are a number of variables and options to choose between. So using electronics under those circumstances can be very difficult, but nonetheless it's worth it.

SG: A few moments ago you said that you have got ideas of the way things might go, but it's a matter of courage and economics before they can be taken up. Would you like to tell us about these ideas, or would you rather keep them under wraps for the moment?

BB: No, it's not worth keeping ideas under wraps. I think that drummers will become much more aware of timbre through electronics, and become more responsible for the type of timbre they produce. They will be able to make up phrases out of timbre, as I was starting to do on "Industry." I think that the idea of a percussive continuum might stop. Somebody else in the band might do that, although you might comment on it with timbre. Personally, I would quite like to reach a stage where I'm just playing 20 pads. I very much liked the way they were racked vertically when I was with King Crimson. That's an economic factor, you see. A "big"
band gives you big bucks, which means you can stage things. Staging and presentation is very important, as we have been saying. Percussion should always look magical, as if something wonderful is going to happen from it. I could stage the most fabulous percussion stuff with electronics, given an unlimited budget. But it all comes back to economics, and people get what they pay for.

SG: You almost seem to be gravitating towards a situation in which you are an electronic percussionist, doing what you’ve just described, but with room for a drummer in addition as keeper of the beat.

BB: Sure. To a degree King Crimson did that, when I was playing a vertical wall of analog sound. At that point we needed another drummer, which was Adrian Belew, the singer. He was able to move over to the drumset, which worked well. I think that Ornette Coleman has done some nice stuff, with his son on electronic drums and Jack DeJohnette on acoustic set. There are lots of combinations you can use.

SG: But with Earthworks you are combining the two things.

BB: Yes I am. It's a difficult blend. In Earthworks I'm a hybrid—part drummer, part keyboard player. I'm playing as much keyboards as I am drums, but I'm playing them underneath the sticks, from Simmons pads. I think that if you analyzed the 90 minutes of music in an Earthworks set, you would find that for about 45 minutes I am playing only keyboard sounds, and for the other half I'm playing drums and/or a blend of drums and keyboards. I'm ranging from the fairly bizarre to some airy and simple ordinary drumming. There's more I would do with Earthworks, but you have to take things slowly. It takes time, and it has an effect on other musicians. That’s another of the beautiful things about electronic drumming: It’s making other instrumentalists listen to themselves a bit differently, and also figure out what they’d like the drummer to be doing. People I’ve worked with like David Torn and Mark Isham are amazingly clued-up about drumming. They have come up with things that they have either programmed or played from the keyboard and that have been very imaginative. What can a drummer think of that’s better than that? Why have a drummer in the band? When you look at it cold-bloodedly like that, I think that drummers need to realize that they must change themselves and offer a bit more than the old thing going on at the back.

SG: The blend of drumming and keyboard playing you do is certainly the most radical development since they started having one person playing a bass drum and snare drum simultaneously. And look what that started.

BB: Yes, but that was originally an economic move. It’s not always necessarily the best artistic motive for doing something. A human being is an expensive proposition in the West. I often envy other cultures. For instance, in Rio you get enormous drum sections. But they’re not professional musicians; they are joining in with something that is part of their folk tradition. When it comes to playing chords and keyboard things from the drumset, there is a point at which it just becomes a pain in the neck. I think I’m getting pretty close to that already, if I haven’t actually reached it. Okay, it’s clever and it can be done, but it’s a little like watching a dog standing on its rear legs. It can do it, but so what? It’s better on four legs. [laughs] I think that with MIDI you’ve always got to bear this consideration in mind. I don’t want to be a lousy keyboard player, just because I can play it from the drumset—any more than I want to have lousy drumming going on, just because the keyboard player can play drums from his keyboards. What you’re looking for is such an interesting and idiosyncratic part that no keyboard player would have dreamed it up. The musical context must be right, too. I deliberately chose the instrumentation of Earthworks so that we could have the lineup of two horns and single-note bass, in order that the space would be clear harmonically for more chordal stuff, but from the drumset.

SG: Would you accept the premise that the feel a drummer can produce is affected by the length and quality of the notes he plays, as well as by their placement in the measure? With electronics there are many possible variables that are not there with acoustical instruments.

BB: Yes, there are. But I think it is an instinctive thing that we do on an acoustic
Kit anyway. What you get with electronics is a magnification that people have come to accept and expect. Acoustic drums are almost too subtle for the modern ear. We're in an age that is used to Panasonic vision, the size of movie actors, CD-quality stereo sound; it's a de-sensitized age. I sometimes feel that my acoustic set is too subtle; it's almost a chamber instrument, like a harp. I do spend a lot of time going back to the acoustic drums, just to play them. The feel of those sticks when I strike electronic pads is quite different to the feel of acoustic drums. So I like to spend as much time playing on that lovely, sensitive, classical instrument as I do on the electronic kit, so that I don't remove one too far from the other. The way electronic drums respond is different. With acoustic drums you have to work. You have to pull that sound out of the drum, whereas with electronics there is a tendency to let them do all the work.

SC: Talking about acoustic playing, I love the stuff you do with brushes on the *Flags* album with Patrick Moraz. That's something you can't yet do with electronics.

BB: Well, brushes are lovely; it would be really hard to give them up. I use them on the *Earthworks* album, too. That's on the ballad "It Needn't End In Tears." Brushes are such a simple device. I like to think that on any LP there can be a mixture of the hyper-tech and the simple and primitive—like brushes, or something like this: [He goes over to a shelf and takes down a piece of string with a bent piece of metal on the end. He whirls it around, producing a sound like a swarm of bees.] That's on *Earthworks* too. It's on "The Shepherd Is Eternal."

SG: I thought that sound was you rolling on an electronic pad!

BB: [laughs] You see, now you're totally gone. You think everything's electronic! There's a serious point from this, actually. I'm not suggesting you do this, but people often expect electronics. It's 1988, and if I speak to you in the language of 1954, you're going to find my choice of words a bit strange. Consider the same thing musically: It's 1988, and I'm reaching young college students, I want to speak to them in their language. That's another attractive thing about electronics: It allows me to reach people of that age who understand these sounds more than the more subtle acoustic piano or acoustic drumset.

None of what I'm saying is supposed to imply that there is anything better or worse about either acoustics or electronics. They are different shovels to dig the same hole with, different paths to get down the same road on. I've fallen down this electronic path somehow, and never quite managed to get off it.

SC: What made you get on it in the first place?

BB: [laughs] Well, as always, it's a matter of time and place, and what seems pragmatic at the time. In this case, it was 1980, and I was doing *Discipline* with King Crimson. At that time there was much promise of the electronic revolution in music. There was the Roland guitar synth, and Robert Fripp was proposing that he and Adrian Belew use one of those each, and that Tony Levin play *The Stick*—which is a very hard instrument to master—and what was I going to do on the drums? "I understand that they make electronic drums now...." So down comes a set, and on the whole they were impossible to play. But everything always is impossible at first; if you want to make up a fresh idea, it's impossible! The thing is that it's no good looking at the thing and saying, "This is impossible." Everybody knows that. The important thing is what you can do with it. Nobody wants to know the problems. Nobody wants to know that it doesn't perform like a Bosendorfer. The excitement that musicians have when they are given new sound-generating possibilities ought to override any worries about, "It doesn't perform..."
like my old...." It doesn't! And keyboard players generally came to grips with this much better than their drummer counterparts did. Drummers are more conservative, so they moaned endlessly about what the instrument didn't do—while completely failing to understand what it did do.

I just got stuck in. I pitched them up to do "Waiting Man" with King Crimson, and I got the industrial-sounding set for "Industry." Sure I complained. I was the first guy to freak out when there was a lighting buzz through everything, or when the instruments occasionally failed completely. I was the first person on the telephone screaming and shouting. But when this happens you will be told, and quite rightly, that being a ground-breaker can be pretty unpleasant. It's hard on the hands. That's life, and you've gotta put up with it, or you can wait 20 years and then buy a DX7 or an SDX. It's whichever you want to do.

SG: Hasn't a lot of the conservatism in drummers to do with the fact that what they are called upon to do in musical situations is generally fairly...

BB: ...conservative? [laughs] Yes, that's true. In fact, taken overall, there has been very little take-up with electronic drums. There was a brief flurry of activity in the electronic drum market when every young band on Top Of The Pops had an electronic drumset, so consequently your cover band playing at the Holiday Inn had one, too. There was a brief marketing spasm, but on the whole the thing has been grossly misunderstood. The best programmers are keyboard players anyway, because they've managed to overcome this whole problem about computers, which drummers are still lumbered with. So, I see the field as being wide open still. I'm in there, firing away, doing my job and trying to keep my nose clean, and I feel like saying, "Jump in everyone. It's all here. We can do some amazing things!"

SG: Surely, there's the economic factor again here. You've been saying how expensive it all is. It puts it well beyond the range of the average 17-year-old, who is trying to make a start.

BB: Yes, there's some truth in that, although I was talking mainly about how expensive it is at the top level. Also I think that economies of scale will operate: The more people who do it, the more units will be sold, and the price will come down. You need people to get into an idea of something. Drumsets only cost the price they do because next year 1.2 million Americans will buy a drumset.

One of the main reasons it isn't catching on more is that you don't hear it on the radio. I don't mean electronically produced backbeats on pop records; you hear that all the time, of course. But you don't get creative music using new sounds in new ways, because most record companies are nihilistic, backward-looking institutions who don't want anything fresh; that kind of music upsets the status quo. It all stems from the marketing angle: The advertising agent, the marketing man, and the accountant are the people who are running the scene. It hasn't always been like that. When I started in the late '60s, the musicians ran the scene, but that all changed because money was being made, and big companies jumped on it. Big companies have accountants who run them, so we musicians have to dance to the tune of the accountants. Hence the phrase "Society gets the music that it'll pay for." However, in this environment I still think that people could do more with electronics. Michael Shrieve is making an interesting album, and we've got Earthworks Two coming out in March, so there are some things happening. But it is wide open. You don't have to have a Simmons SDX; there's lots of other stuff you can use.

SG: In the "Hell's Bells" chapter in your book, you say that you join new groups to learn about yourself. Presumably this philosophy extends to your finding new instruments and new sounds.

BB: Yes, very much so; it's all part of the same thing. I join new groups in order to develop as a musician; likewise I get new instruments. The interest you show in your instruments, and the care and attention you give them, reflects on you as a person. The whole musical endeavor is a way of showing me about me. It's how you respond in situations, how you make the choices you make. We were talking about courage earlier. A little bit of courage is required to leave the thing that made you famous for ten minutes, and move on to something else. But people are always saying to me, "You were so courageous leaving Yes!" Courageous? Bullshit! It was self-interest.
The self-interest is staying interested in music. That's why I left Yes, to stay alive, to feel blood going around in my veins, not to fall asleep.

SG: Don't you think that there can sometimes be a case for saying, "How will we develop if we stay together?" instead of, "How will I develop if I move on?"

BB: I see what you mean, but there is always a natural tendency to put yourself first, over and above the group. The group ought to be a vehicle in which to change yourself and make yourself a better musician. It may be that for a while you'll mark time with a group in order to keep it together, because you believe that ultimately, when it is firing on all six cylinders, it will be a wonderful thing and will help you progress. But when it comes to a time when you have been marking time for too long, or you are actually slipping backwards, or you are just repeating yourself, then it is your moral obligation to get up and leave. To heck with moral obligations; if you're bored, get out!

I think that musicians demand very little from themselves. The audiences demand very little, the record companies demand very little, and musicians give very little. Everybody is quite happy to see a very static rock band go around the world milking millions and millions of dollars out of the scene. Everybody consumes the same music; there's no regional difference. I think it's a shame, and I think that if musicians were a bit more honest with themselves, they wouldn't be so complacent. But the nature of the star scene is that you will join a headlining band, you will go on tour for two years, you will play 232 cities, and everybody from Bangkok to Bangor, Maine will like the same music, because that is good economic sense, and that's life! I don't think that musicians should sit with that, especially if they know at the outset—and this is often true—that the music will bore them utterly to death. I find that almost unforgiveable.

I don't want to be bored. I haven't got time to be bored. If I ever bore myself consistently for a year, I will give up being a musician. I would lose my self-confidence—the feeling that I really do have something to give. That is why whenever I am asked to join one of the '70s retread bands, I say no. It's not a reflection on them; they can do what they like. But for my own good, if I give up what I'm doing for a year or so, I'll never get back to it. I'll stay the way I am now, and I don't want to do that; I'm too interested in what's coming up next.

SG: Do you see your musical career as a constant search?

BB: It's a constant stepping forward; and yes, it is a kind of search, because you are constantly looking for yourself in what you are doing and trying to move forward. It's interesting. If anybody had told me in 1980 what I'd be doing with a drumset in 1988, I would have said, "You're joking! That's out of the question. Playing keyboards from the drumset? Impossible." I wouldn't have been able to grasp it as a concept. That is a measure of distance traveled. My own interest is fired by that journey forward, but if somebody else doesn't feel that way, that's fine.

SG: Do developments in technology spur you on?

BB: Yes, and they spur me backwards sometimes, too! [laughs] It's all part of life's complexity right now. Not only are you dealing with the record company, who are giving you the right to be heard, but you are also dealing with the manufacturer, who's giving you the right to play on something. I don't consider that I have a drumset really. You can see there are drums lying around the place, but I never sit at the same damn thing twice. As far as I'm concerned, I come with two sticks, two wrists, and what's in my head. I'll try to make music out of anything. The drumset is constantly changing. It's rather like Yehudi Menuhin getting an extra string on his violin. You say, "Hold on, I was doing quite well with four strings; do I need a fifth string? Well, alright. Just leave me alone for a while, so that I can find out how to use it." Then they give you a sixth string. You're not sure you wanted a sixth string, but life has given you one. I'm not sure that I wanted electronics, but they're around, so I'm going to use them. If they'd never been invented, I'd still be happy playing my snare drum.

SG: The idea of a constantly changing drumset would be totally intimidating to many drummers, myself included. Do you sympathize with this view, or do you think that people should just take this sort of thing in their stride?

BB: Oh yeah, I appreciate this problem. Drummers have a choreography around their instrument, and if you change it around they can get nervous. Because of what I'm doing, I have had to learn to take it in my stride, I think. I play on a number of pads to which I assign a series of different sounds by changing patches. So on tune number one, this pad here was playing a C7 chord, but on tune number two, that same pad is playing a Dm7. I just have to remember all this stuff. My pads have fresh information re-configured to them every time I press a switch. It may happen four times in one song. I might start the piece of music with an African drumset of sorts, then as the piece progresses, those African drums have chords attached. Then as it progresses further, that row of chords changes to another tonality—to another series of chords altogether. Then I'm back to the first thing, but for only four bars, then on the fifth bar we're back to another tonality, but this time it's chords on their own. We've stopped the African drums, finally, and towards the last 30 seconds of the piece, we're just going to go to a big heavy-metal-sounding drumkit sound. End of piece—applause.
pads during that piece have generated five different configurations. So my set is changing all the time: it's just a case of remembering what comes up where. When your drumset changes like this, your whole conception of your instrument changes from piece to piece, and I like that.

SG: Do you or Django Bates play every keyboard note we hear, or is there some sequencing?

BB: When we were recording the album we did use a sequence at one point to save time, but we weren't at all happy about it. Live we play everything! There is no sequencing in my rig at all. There's nothing automated. This is a big distinction. Some people assume that electronic drumming means automated drumming. Nothing could be further from the truth as far as I am concerned. I hit a drum, and it will produce some kind of sound. I have a lot of control over the choice of sound it makes, but I have to hit it.

SG: Excuse my asking, but I wondered whether on "My Heart Declares A Holiday," for instance, where you play a solo of standard drum sounds over a backing of mantric bells, you had kicked off a sequencer and were soloing on top.

BB: Yes, I see what you mean. You could do that, but it is actually played live by a keyboard player. On a record it is increasingly hard to tell what's what, and nobody really cares; they want the music to work for them, that's all. But I'd always rather have a repeated pattern played live, and played steadily, rather than have somebody just press a button and go to the bar.

SG: Are there any developments in electronic percussion that you would particularly like to see?

BB: No. There are aspects of Simmons gear that I would like to see changed in my favor, but I quite understand that the company can't cater to what I want all the time—although they have often done their level best, bless them. So there are some improvements I'd like, but there's no shortage 'round here of the means for interesting sound production: machines, instruments, pads, drums, guitars, vibraphone. I don't want any more at the moment. I'm running fast to explore all the stuff that the computer software writers are writing. Band-leading takes a lot of time, and the difficulty for me is to find 24 hours in the day to talk to everybody. It is the band-leading that, of necessity, defines my attitude to drumming. I can't be as advanced on a Simmons SXD as the software guy who wrote it. I can't be as good a composer as the guy who is able to spend all his time writing music. But I am a guy who has been able to put the whole damn thing together and finally bring it to the Chicago Ravinia Festival, and that daily does please me. The initial idea of putting the band together, through to making the album, through to the live gig, is a two-year job. And the culmination is standing up at the end of the evening and acknowledging some applause. You've thought it all through, you've done it, and for 20 seconds you can feel really pleased with yourself. That's a bandleader's philosophy.

SG: Gary Burton said that he'd stopped looking for the perfect instrument in favor of looking for the perfect music. Presumably in your case the two developments go hand in hand.

BB: Yes, very much so. The sounds the instrument will produce this year will be on this year's album. Next year, sure as hell, it'll be something else. The methods I use to extract that sound may be constant from year to year, but generally it's a continual journey forwards. You can never be sure what will come next. You have to think fast. If on Monday you press all the wrong buttons on the machine and a fantastic sound comes out, you mustn't stop and worry about it. On Tuesday you write a piece of music around it, and on Wednesday you record it. Then forget it, move on. You're trying to snatch sounds from all this electronic gear. Sometimes you set the thing up and configure it all wrong, and it sounds terrible. Sometimes you set the thing up and configure it all wrong, and it sounds great. You don't know what you did, don't even bother to look. Just write a tune around it, quick!

You discover sounds and think about what they suggest to you. This is how we are currently working on the second Earthworks album. We are working on getting
some humanity out of all this wiring. It throws up a sound, and you say, "That's Aboriginal! That sounds like Ayer's Rock in 110 degrees." I get a cinematographic feel for something, then understand what the music's all about. And then all you have to do is pick up the right notes for it. I think that the faster that process occurs, the better it is. If you spend hours slaving over the piano saying, "Should that be a D, or should it be a D sharp?" you can lose sight of what the composition should be about. Music should have immediacy; you get a sound, and that's it. You go with it. I tend to do things because they feel good at the time. I don't sit around figuring them out. I may only figure out what I've done later, if I stop to think about it, because I'm talking to Modern Drummer.

SG: You paid your dues as an acoustic drummer and gradually became involved with electronic drums as they developed. How different do you think things will be for the generation who are now growing up with electronics already there?

BB: I've met young guys of 11 or 12 who are starting with a basic Simmons set, playing in the bedroom and listening to what they are doing through a headset. Because it doesn't make any sound, Mum and Dad are happy, so they start their drumming that way. It does seem weird, doesn't it, to start like that, rather than with the sound of a drum? But then I'm not part of that generation. These kids are very quick with computers and knobs now. I think they'll regard this rather angst-ridden conversation that I'm having as a bit of a joke. "What on earth is there to worry about, Dad? You just get straight into it, crank up the computer, shift the samples about, shape it up a bit, whack it onto the pad and away you go!"

We mustn't underestimate the speed at which young people will pick up and understand the electronic thing; but where they'll learn their stick craft—that's another matter. Maybe they won't even bother. It may be that the ratamacue is redundant in popular music; I haven't heard one in years! [laughs] Then again, if you want to attempt any more complex music, you'll need all the technique you can get. The only thing I would gently warn against is the common misconception that the mere acquisition of technical dexterity earns you the right to call yourself a musician. You can't write "musician" in your passport 'til you've made someone's spirit dance.

The danger in this type of conversation is that I can sound like something of a tyrant. People are allowed to do what they like. It ranges from The National Association of Rudimental Drummers' All American Champion—the guy who can execute unbelievable snare drum rudiments at the speed of light—to the African drummer who wouldn't understand any of that sort of stuff at all, through to a guy who programs sounds in a New York studio, and who—again—wouldn't understand the rudimental stuff. Percussion is such a big subject that even to have a conversation with you about drumming is tough. If we were restricting it to the subject of white men playing rock 'n' roll drums, we could start to tie it down. But it's such a huge subject. People ask me if I still practice. And yes, I do, but the other things that are going on in the day are arranging the gig, getting the equipment there, booking up rehearsals, programming the drums—figuring something out on the keyboard, and then inserting it in the drum computer's brain—writing the piece of music.... I used to play mallets seriously; I got as far as using them on a couple of albums. But I finally had to give up because there just wasn't the time to develop that side of my playing along with everything else I needed to do. It was too much.

SG: If you were to look into a crystal ball for signs of how your future will develop...

BB: I'm very interested in how my future develops. [laughs] I want to see what things will be like in the year 2000. As I've been saying, there are only so many hours in the day. I don't intend to spend my time playing with the wrong musicians, or waiting for the wrong musicians to turn up! Expectations from audiences have to be met: I'm expected to come up with something new, and I see this as something of an obligation. As with so many inventions, the new technology can be ugly in the wrong hands, but really beautiful in the right ones!
album, *Fly On The Wall* wasn't a smash.

**SW:** Yeah, that was a good album—a bit different, too. It was pretty much a "live" album. We all like to keep them sounding like live albums. *Spontaneity*—that's an important part of it with us.

**TS:** The current album, *Blow Up Your Video*, was recorded in the south of France, right?

**SW:** Near Marseilles, up in the hills. Apart from the scorpions, it was a nice atmosphere to work in, a good studio. We did 17 songs, so there are several from those sessions that will come out on the next album. It was such a good working environment that we got a lot more done than we had expected. I find that if there's nothing else to do but work in the studio, it's better. Like if we record here in New York, there's so much to do—there are clubs open all night—that it's like, "Where's the bass player? Where's Cliff??" So if you're secluded, you don't have as many distractions. That studio—Miraval—was very idyllic, set up in the hills, just a good place to work.

**TS:** I know you love to tour, but is recording exciting to you?

**SW:** Touring is my favorite thing; there's nothing I like more. I don't mind the actual traveling part, because on a bus you can get a game of cards together, watch movies and videos. I don't like hanging about studios; it gets on my nerves. I suppose a lot of drummers are like that. You're ready to get in there and do it, but they make you sit around while they set things up over and over. It's like, "Hang on a minute, we have to adjust that mic."

"You adjusted it only 20 minutes ago, pal," you know?

**TS:** How does the band start an album? Do you go into the studio and start from scratch? Are the songs worked out, and do you go into pre-production?

**SW:** We do our pre-production ahead, and then the songs are basically done. In the studio, we work on the songs and add things in here and there, but they are not always placed in their final form before then. We're pretty easygoing about that. We might still be fiddling around with parts and arrangements when we get into the studio. The basic setup once we actually get in there is to play everything live. First we set down the backing track—all of us together.

**TS:** You don't use a click, right?

**SW:** No I don't. Everything goes down live, which again keeps that spontaneity. Brian [Johnson] might come in during that phase to sing along so that we can get the feel of the number, but he does his final vocals afterwards. That's it, really.

**TS:** That's a relatively fast way to work.

**SW:** Well, for the last album, we took about six weeks in the studio, which is pretty fast. We work with George Young—Angus and Malcolm's brother—and Harry Vanda, his partner. They're great to work with because they know the band. They know how to push us along and give the guidelines. It's a very easy working relationship we've all got, which helps us, naturally.

**TS:** Vanda and Young have been the AC/DC production team for a long time. One thing they're known for is engineering the albums with the drums way up front in the mix. At the same time, this is a twin guitar band, so the drum-conscious production is a bonus.

**SW:** The drums are upfront. I suppose that they've got to be up front to cut through, because it has been reputed that we are the loudest band in the world. Live, the amps behind me are set at five K, and that is loud. You've got to be able to hear yourself over all that, and the audience has got to hear you as well.

**TS:** You've got a relatively small setup, which is not the "norm" for heavy rock players.

**SW:** I've got seven drums. [laughs] Any more than that and I'd get confused.

**TS:** The only part of you that can be seen at the shows is the top of your head. All the audience sees is this head of brown curls going back and forth, because you sit so low.

**SW:** That's the way I like the kit to be set up. It's a bit of camouflage as well, I guess.

**TS:** So you like to hide.

**SW:** I'd sooner get on to my job and just do it. I'm not a forward person on stage. Of course at home, I swing from the chandeliers, naked. [laughs]

**TS:** Being a heavy hitter, do you find that you have to replace heads and sticks often?

**SW:** We usually keep the equipment rotated with new stuff all the time, so there's never a chance for them to break. We change the bass drum head about every four shows, just so that we don't wear them down at all. But I do go through a helluva lot of sticks.

**TS:** You use the 2B's, don't you?

**SW:** Yeah, although I was using un-tapered sticks for a while on the left hand—the sticks without the tips on the end. But I switched back to the standards recently, just to change it around.

**TS:** You've got your live drum sound perfected. Is that from your efforts or the engineer's?

**SW:** Well, our engineer has basically got it down to a "fee." But we still do soundchecks once a week. He and I talk about the sound after the shows, but I wouldn't say that I work on getting my out-front sound. When you're on stage and the sound is good, it's usually good out front as well.

**TS:** The sound on stage must be really loud, but you don't wear headphones. Are you concerned about hearing loss?

**SW:** I've never thought about that. I wore plugs or 'phones, you wouldn't hear everything, and you've got to hear everything, at least I do. Some nights, the sound is really great and you get that blend. It's only occasionally that it gets too, too loud.

But I prefer to get the blend of all the guitars and the vocals coming in. I've got
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wedges of speakers on both sides of me as well as the back monitors. I've got a combo with rhythm guitar going in. And for an extra bit of kick—that extra punch that you need sometimes—there's another wedge where I can just crank up the snare drum, and put a bit of top on it if I need that. The bass drum is going through that wedge too, so if I need that extra bit of push, it's there. It seems to work.

**TS:** Are your drum sounds natural—without electronic supplementation?

**SW:** The snare drum triggers my snare sound—the sound you hear on "Heatseeker."

**TS:** That's it?

**SW:** Yeah.

**TS:** You don't have any samplers to get that tremendous live sound?

**SW:** No. I think that any kind of machines are good for the drummers who want to use them, but I'm not one of those drummers.

**TS:** Have you ever tested the electronic waters?

**SW:** I did have a drum machine once. It was just something I had at home, and I messed around with it a little. But when using machines, I seem to lose that spontaneity—back to that again. I mean, I tried a click track once, for instance, but that just didn't feel right.

**TS:** You never play with a click or a machine, but you're known for precise time-keeping, but he's so right out electronic supplementation?

**SW:** For me, the rhythm is just there. It's hard for me to say that I learned that, because it's always just been there. I'm not just listening to myself, I'm listening to the guitars, to the vocals, and to the feel of the song. It just sort of happens; I don't really think about it.

**TS:** You were born with good time?

**SW:** No, it's not hard at all. I think I play a lot of things competently, but I don't think about that when I'm playing with the band, because anything more than the basics wouldn't fit the songs.

**TS:** With your experience being exclusive to heavy rock bands, how did you learn to play other styles?

**SW:** Just through listening to records and by tapping away, which makes you think of patterns.

**TS:** How much of what you will play in a chorus or for the bridge of a song will be decided by you?

**SW:** I'll suggest parts, the other guys will suggest parts, and then we'll toss it around a bit. It's a very easy working relationship within the band. It's not strict at all as far as who decides what. If something is working, then we use it; if it's not, then either we'll come up with something else, or we'll move onto another song. There's no real pressure.

As far as the sound is concerned, it goes back to what I said earlier: We try to get a live sound—the way the drums are recorded and the overall feel of it.

**TS:** Suppose that people who are not necessarily fans of AC/DC might perceive a lot of the songs to be basically similar, although they really are quite distinct to those who are familiar with them. But in respect to tempos and feels of the songs, there does tend to be a certain continuity. Does that ever become tedious for you night after night when you're touring?

**SW:** When you're starting the show off, you do think like that sometimes. But once you start it up, you get into it, because when the show begins, there's bound to be somebody on stage who's already rocking along and well into it. Like Angus will be starting his own thing at the other side of the stage, and he'll give you a look like, "Come on, get into it," and it's really catching. Then the crowd will plug into it and it all boosts you; it keeps you going for the whole show.

**TS:** What's your secret for maintaining that high energy level for two hours every night?
SW: I don't have one; I don't do anything. I never work out. I hate exercise; I'm really a lazy little bugger. And as far as playing live, I don't really do anything to prepare for it. I just get out there and do it. Again, once you start playing, then it really gives you that adrenaline boost, and you're off.

TS: So you're not one of those drummers who religiously warms up before shows?

SW: I don't do warm-ups, but I do clean my hands every time before I play. I use this stuff called potassium permanganate. I had a lot of trouble for years with blisters; at one point I had to go to the hospital after every gig because they were so terrible. So I thought, "I've got to do something about this," because it was getting really bad, and we tour for so long that it would be ridiculous. So I went to a doctor in London, and he prescribed this stuff. He told me that the blisters weren't healing right and that using different soaps on my hands or face only aggravated the problem. So he gave me this stuff that just cleans them out, and it really worked well. It gets rid of all the bacteria and prevents infection. I don't know if it works for every drummer, but it might help somebody with that problem.

TS: Is there a "cornerstone" in your playing that you learned early on, and have always relied on?

SW: I always found that keeping the hi-hat in time is the key, and if you keep your mind on that first, it all usually falls into place; the rest just comes with it.

TS: Is there anything else that's been basic of your playing and that has always helped you?

SW: It sounds really basic—now this is for people who are just starting out and who don't really know how to play the drums—but when you've done a fill and you're going back to the beat, if you end the fill on the bass drum it makes it sound right. But that's really just for people who don't know how to play. The thing is, it can be really confusing at the beginning when you start to learn to play—especially if you're self-taught. I mean, the simplest thing like that can be aggravating if you're not getting it right; you get a block, and it's frustrating. When I was learning, I'd be thinking, "What's that? Why am I not doing this right?" if it wasn't falling into place right away. It's easy to lose patience with it.

TS: Besides the obvious, what do you enjoy the most about being a part of AC/DC?

SW: It's great being on the road, playing live. The band has good songs, and I love the music.

TS: Traveling all over the world every other year must have its advantages.

SW: I think it makes you more aware of the differences in people. I mean, even in America, compared to where I'm from, there's such a big difference in everyday things—drive-through restaurants, automated banks, and the people are definitely crazier here. Manchester is a very depressed area, but it was a great place to be brought up in some ways. The problem is that it's the old unemployment story up there; there's so many people out of work. Everything is a struggle. It's a struggle just to have a good time because it costs money to go out to a club, and most people can't even get the money together for that. It makes people want to fight a lot; I guess it's sort of a rough place, like Brooklyn. But it definitely has its good points, too.

TS: Do you mean "good" as far as the working-class values that have been instilled in you?

SW: Yeah, the values—that's a good point. The values are very up front because it's a working-class environment. As long as you keep them in perspective, you're going to come out on top. You've got to know when you're right and when you're wrong. A sense of family is important to me; that keeps my feet on the ground.

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Drummers seem to have all sorts of opinions about reading music. Some learn to read quite easily and naturally; others are absolutely paranoid about reading. Some drummers seem to believe that learning to read music will somehow take away from their playing. A few simply feel that, since they don't intend to be studio drummers anyway, why bother? Another group feels that any studying will prevent them from developing an original style.

My observation is that if you ask drummers who do not read music, "Is it important to read music?" most of them will say no. However, if you ask the same question of drummers who can read music, the answer will be yes.

I urge my students and all young drummers to learn to read, because reading helps you to understand rhythms. It helps you see, hear, and feel the rhythm, and you'll learn it in less time because you can write it down. I've found this to be important. You may tell yourself, "Hey, that's a good beat; I'll remember it." However, written music is like a telephone number: If you write it down, you will probably remember it; if you don't, you will surely forget it.

Reading music qualifies you for many types of opportunities, especially recording. It is so costly to be in a recording studio that when you save time, you are literally saving money. Although many records are made by drummers who read very little, all of the commercial-type studio work requires reading. You only have to imagine a TV show where none of the musicians could read music. Not only would it be chaos, but also so costly that no sane producer would consider it. Virtually all commercials require some reading, as do movie soundtracks. Many good-paying situations require reading.

It's always a shame to see a good drummer lose a job or an opportunity for lack of reading skills, because anyone can learn to read; it's just simple mathematics. If you can count to four, you can learn to read—and in a fairly short period of time. Reading is really just another skill—another way to learn and to process information. Learning never hurts talent, but lack of information often does. Once we understand that reading to learn music is not going to hurt our playing, we can proceed.

There are several ways to approach learning to read. "Counting out loud" is recommended by many teachers. This is a good method in a student's beginning stages, but can create some difficulty breathing when reading something complicated. I use the "out loud" method as well as the "silent count." I adjust the method to the student. Some are much more comfortable with the silent count, which might be preferable because, in the long run, that's the method we will use in professional situations.

After the basics have been covered, the intermediate to advanced student should write out the counting above each measure in pencil. (This way it can easily be corrected if a mistake is made; you never know when you might need to change it.) The reason for writing out the counting is that it requires you to analyze each measure and each rhythm. This registers the rhythms and the counting visually, and you'll be able to understand both the counting and the rhythms before attempting to actually play them. Now all you'll have to do is physically play the music you've just analyzed visually. You've got the counting guide above each line as a reference.

I have a number of students who came to me with real reading problems. Within months, their improvement, using this method, was impressive. They like the method because it takes the mystery and fear out of reading, and they were also gratified at the rate of improvement. Now each student who had reading problems is not only a good reader, but a really good sight-reader as well.

Another technique I've found helpful is selecting a page of music that must be read from top to bottom. Reading line one exercises and stopping at the end of each line is fine for beginners. However, if it becomes a habit, it can cause problems later on. So can stopping at each mistake. When you are in a band, you can't stop playing just because of a reading mistake; you must keep going. Try to read an entire page without stopping, no matter how many mistakes you make. After completing the page, go back and work on the trouble spots. Then return to the top of the page, and read and play it again, from beginning to end, without stopping.

Another good tip for drummers (as well as teachers) is reading through a lot of material, rather than spending too much time perfecting each exercise before moving on. My approach is to keep moving. As long as you understand the counting and realize where and why your mistakes were made, move on to new music. You'll probably find yourself relaxing and concentrating on reading the music, rather than trying to avoid making mistakes. As you read through more and more material, you'll begin to recognize rhythms and phrases that are repeated. Written music will begin to look like a familiar language, rather than something unpleasant or fearful. You'll begin to enjoy reading, because you'll feel more confident.

So, don't worry about reading music, because it doesn't have to be a problem. Just spend some time reading each day, using the methods I have suggested, and your reading skills will improve. Once you find out how easy it is, you'll wonder why you were ever concerned. If you're a talented young drummer, learn to read. You'll be glad you did.
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In this article, I'd like to address some styles and options available to you for playing ballads and slow tempos. As promised in my last column, I will draw an example from my latest solo recording, *Motion Poet* (Denon compact disc). The song's name is "Not A Word."

The tune starts, drum-wise, as any typical ballad might: on brushes. Let's review a little basic brush technique. We use brushes because we don't want the attack of the stick. We want a more gentle sound, and generally a more legato sound, especially on ballads. This involves moving the brush across the drumhead in a gentle, legato, and elegant manner. The idea with a ballad is to play pretty. As a starting point, we're dealing with a circular motion on the drumhead. The hands generally move in opposite and contrary directions. The way I play is by moving my left hand counterclockwise and my right hand clockwise. (Many drummers play the other way.)

In Diagram #1, we see that the left hand is rotating counterclockwise, and the right hand clockwise. If you imagine the snare drum as being the face of a clock, the left-hand circle is located between 7:00 and 8:00, and the right-hand circle is between 1:00 and 2:00. In the first exercise, practice making one rotation per pulse with each hand. Start the rotation at the top of each hand's circle. You'll notice that there's not much definition to the beat; you don't hear each pulse as it's occurring (it's very subtle). This is okay for now. Just make sure that you get as smooth a rotation as possible. Don't push or "swish" the beat.

Now we're going to apply some articulation to this. The left hand will continue the smooth, counterclockwise circles. (I use my left elbow and entire lower arm to move the brush, not just my left wrist. This is to ensure that the brush-to-head attitude remains the same.) Lift the right hand just as it completes its revolution, and gently tap on the drumhead at the beginning of the next circle. In other words, the right hand will attack at 12:00 and lift just prior to that—at 10:00 or 11:00—so that the right brush stays on the head for as long as possible before articulating the next quarter-note pulse. (My right-hand fulcrum is between my thumb and the first joint of my middle finger. Articulation is achieved by a lifting of the brush accompanied by an opening and closing of the grip.)

This quarter-note brush pulse is quite effective and will work in a number of musical situations and circumstances, as in this ballad. Let me show you the next step in playing this kind of brush beat, using the "over and under" movement—that is, the hands and brushes literally go over and under each other. The brushes are moving in the same basic directions as before, but we're moving them over a larger area of the drumhead, creating more texture and inflection within the basic quarter-note pulse. Again, the right brush articulates each pulse by tapping the head lightly. To connect these pulses in a smooth and legato manner, I quickly swirl the brush, first dragging it momentarily across the surface, then rotating it slightly and rapidly. It is a subtle movement.

It is possible to articulate rhythms outside the quarter-note pulse with either hand. You should practice doing that. Again, "Not A Word" begins as a fairly normal ballad with a...
Playing

by Peter Erskine

slow quarter-note pulse (m.m. = 48), emphasized with a soft 18" K sizzle cymbal note every so often. Otherwise, there is very little punctuation, or "cutting," of the band figures.

You should approach any ballad with an attitude of great patience. You can't appear to want to be in a hurry to finish the song. This requires great trust in the other musicians and, most importantly, in yourself. Know that the relative "little" that you're doing is quite enough. Laying the "pad" and keeping the time prepares the music for greater things to come.

For John Abercrombie's guitar solo, the arrangement goes into a double-time feel (m.m. = 96), but with straight 8th notes. It is similar to a rhumba. (At the session, we referred to this part as "the Pete Cha-Cha." ) Again, patience and subtlety are begged for here, so using the brushes, I play a guiro-like pattern with the right hand, eventually accenting (or lifting) the left-hand pulse on the & of beats 1 and 3, with the hi-hat on beats 2 and 4 (remember, this is double time), and the bass drum on the (slow meter) backbeat.

The bass drum played on the backbeat is a great gift for which we can thank, among others, Steve Gadd, as well as the drummer who played on Roberta Flack's recording of "Killing Me Softly." Anyway, as the song progresses, I pick up a stick and start to play (softly) beats 1 and 3 on the sizzle cymbal. The ride-cymbal activity picks up as we go along, until I get to 8th notes on the cymbal. By now, the bass drum is being played on the downbeat of the bar, but I don't want to play backbeats on the snare drum. (Horrors! I've often heard drummers, particularly in high school big bands, resort to this on any ballad whenever the rest of the band starts to get loud.) On a ballad, the backbeat can be played on a deep-sounding tom (13" or floor), the bass drum, a crash cymbal (with no other punctuation, and played with a sweeping motion on the edge of the cymbal), as a cross-stick rimshot, or on the snare drum. Playing a roll on the cymbals, with either sticks or mallets, is another good idea when a ballad gets dynamically or emotionally more intense. Remember that by your orchestration on the drumset, you can respect the mood and emotion of the music (or you can totally foul it up). And if you're working with a singer, you'll certainly want to know, lyrically, what the song is about. Know the lyrics. Tell a story. This is good advice if you're playing instrumental music as well. And, as always, strive to be musical!

Thanks to 21st Century Music for allowing me to draw from my book Drum Concepts And Techniques for some of the brush-playing examples. Music © copyright 7988, Ersko Music.
main mix. More on monitors later.

Our next section on the main board is the equalizer (which is a fancy word for tone control). The equalizer section can take many forms, depending on flexibility and expense. It's important to distinguish between the individual channel E.Q.'s and separate, graphic, post-board E.Q.'s. Outboard equalizers, like effects, can be patched and returned. Most outboard equalizers are used on the outputs to the amps. They are not used to change the tonal color of your sound, but, rather, are used to control feedback. They do not give you the ability to separately E.Q. any individual channel and are definitely not a replacement for good channel E.Q.'s. The equalizer is often the most poorly used section on the board. Generally, you want to avoid E.Q. unless it's absolutely necessary. Many beginners overuse E.Q. and end up with a feedback-prone system.

Following the E.Q. is the channel fader—which controls the individual channel level—and then the channel mute—which mutes or "shuts off" that channel. Next we see our pan pot, and then the assignment switches. You will notice that the signal can be sent to one of four subgroups. Subgroups are useful, since you can assign an entire submix (such as all the drums, all the vocals, etc.) to one subgroup fader. This allows you to change the entire level with just one fader, without affecting the balance inside the submix. The signal then goes to the master fader and then out the board. Notice that you don't have to go through the subgroup circuitry, but can instead send your panned signal directly to the stereo output. Now, before you start scratching your head, let me explain "panning." If you look at our flow diagram, you will notice that the signal comes into the pan pot and is divided in two. The pan pot adjusts how much signal goes to the left and right sides of the system. This allows for stereo placement (that is, whether the sound seems to be coming from the left, right, center, or anywhere in between).

You might have noticed that we have skipped over one thing on the channel diagram. These are the sends. A "send" is simply a place where the signal is tapped off for a mix that is independent of any other mixes. There are often several different types of sends on any console—using terms such as "effects," "monitor," "auxiliary," "foldback," etc. Different features for each make some more desirable for certain applications. In our figure, the monitor send is designated as being pre-fader (before the signal is affected by the channel fader). This prevents our monitor mix from being changed when we change channel levels in the house mix. The effects send in our diagram can either be pre-fader or post-fader. A pre-fader setting offers the same benefits as before. But a post-fader setting might be more desirable for an effect like reverb, since as the level of the channel decreases, the amount being sent to the reverb unit also decreases. This avoids ghostly "swooshes" of reverb when the instrument should be gone from the mix. Some consoles have a send specifically designed for reverb (often labelled "echo send") which is fixed to a post-fader point.

All of the master knobs and switches are typically located on the right of the board. These include masters for the sends, which adjust their overall level. There are also return knobs that adjust the amount of signal (typically from an effect) being mixed in with your master mix.

Okay, now these knobs won't seem so confusing. But the question remains: How many knobs do you actually need? That is, how big a mixer do you need? The biggest mistake you could make would be to buy a mixer with only just enough channels to meet your present needs. As your sonic sophistication grows, you will find a need for extra channels—either for use as effects returns or for future expansion. Keep in mind that mixers usually come in standard sizes such as 12, 16, 24, and 36 channels. When choosing a mixer, determine how many channels you require, and then round up to the next biggest size. Check and see if your mixer has "stacking" inputs that allow for future expansion.

If you seem to be running out of channels too quickly, a sub-mixer could be a solution. A sub-mixer is often a "mini" mixing console with few sophisticated fea-
Get a reverb! Don't buy any other effects when you start out. Put your hard-earned bucks into a quality "core" system. As your knowledge, sound chops, and gig money increase, you can begin to consider buying all that neat gadgetry (such as digital delays, choruses, delay/reverb combo units, etc). For a beginning system, Alesis has their Microverb and Midiverb, which are simple to use and set up, and have a good assortment of reverb settings. Just make sure that you leave patch points for adding effects later.

AMPLIFICATION

With amplification, the big question is: how much power? Fortunately, many speaker manufacturers rate their speakers with a recommended power. They don't want unhappy customers. On the other hand, the salesman wants to sell the biggest amp possible. I'd believe the speaker manufacturer. If this is your first system, for simplicity's sake one power amp channel per loudspeaker cabinet should be sufficient. Naturally, this statement implies alternatives. Multi-amping is used in larger situations and by professional engineers. Multi-amping divides the frequency spectrum into distinct bands, and then individually amplifies these bands and sends them to their own speakers. This allows each speaker to be optimized for a specific frequency range, thus giving better performance. This is what multi-amping does for professionals. For people who don't know what they're doing, multi-amping is great for blowing things up (namely your speakers). I suggest that you start simple and then build on as your experience grows.

SPEAKERS

Today, there are as many speakers on the market as mic's. Depending on your needs, you will be able to choose from full-range speakers, multi-speaker cabinets with built-in crossovers, or individual speakers. For small performances, multi-speaker cabinets work great, particularly because they simplify setting up. The cabinet can either be made up of direct radiators, horns, or a combination of both.
other at the top of a flight of stairs. Conditions like these sometimes make things difficult, but you can still get good speaker coverage. Naturally, you want your speakers placed in front of your mic's (otherwise you're going to get enough feedback to break half the wine glasses behind the bar). You should also try to keep in mind how directional the speakers are. Once they are set up, take a walk between them. Does there seem to be a dead area in the middle? If there is, you might want to angle the speakers inwards slightly. Now how about the stack itself? I think everybody would automatically put bass bins on the bottom, mids in the middle, and horns on the top (probably just because it looks good). This isn't the only way to stack your speakers, but it's probably the most practical, and it helps to avoid some bad practices. For example, I've seen soundmen who take the horn and stand it up on its end. Just looking at it should tell you that the horn is only going to spray high-end sound down a narrow band of the audience from the floor to the ceiling. It is also best to put the more directional mid and high frequencies at ear level. Since the bass diffuses better around corners, it will tend to take care of itself.

MONITOR SYSTEMS

When on stage, your proximity to the live, unamplified sound sources (drums, guitar amps, etc.) can make the house mix sound unbalanced. Also, the echoes of the main system may muddy up the sound you are hearing—interfering with your intonation and rhythm. (Complimentary drinks for the band also tends to do this.) That's why you might consider a monitor system. To decide what you need, you should consider your situation. If you're planning on playing reggae on the patio of a tiki bar, I doubt that you will need any sort of monitor system. But if you're playing thrash metal in a small auditorium, stage monitors are a must. In the interest of saving money, keep in mind that the most important thing that you will need monitors for is the vocals. I've found that, even in fairly large setups, a properly regulated stage volume will allow all the musicians to hear themselves and each other (except for vocals, naturally). If you think that you're going to be in a situation requiring a monitor mix containing various instruments along with vocals, you start running into a little more money. If you are in such a large situation that you need separate monitor mixes—and have the money to pay for the equipment—give me a call! I'd be glad to run sound for you. But seriously, folks, separate monitor mixes require not only separate speakers, but separate amps and sends on the board, as well. Then you "hear" each of these mixes simultaneously at the mixing position. This is why the big systems have a mixer on stage and several sound techs running it. Not beginner material! You will probably only need monitor speakers for vocalists and an amp to power them.

A major problem with monitors is feedback. What you have is a speaker pointed at the very same mic' that gives it its sound source (often with the lead vocalist swinging the mic' all over the place in front of the monitor). Feedback occurs when the speaker produces a sound level at the mic' equal to, or louder than, your sound source. Because most performers have a desire to hear themselves as strongly as possible, most monitor systems are operated reasonably close to feedback. On top of this, the engineer out in the house can't hear it very well, because the main system drowns it out. Several solutions are possible. The use of a graphic equalizer lets you pull out the frequencies that have more of a tendency to feed back. Also, since a cardioid mic' does reject to the rear, use cardioid mic's for all vocals, and try to place the mic's and the monitors in such a way that the rear of each mic' is pointed toward the speaker. (The third solution is to chain your lead vocalist to a chair, but that tends to make them nasty.)

OPERATION

Since you are now a monster at understanding consoles, I'll give you some quick operating theory. Next time you go
to a club, listen to the band's system in between songs. If you hear a horrible hiss, realize that the engineer is doing something wrong. Any P.A. system has a far wider dynamic range than any recording system (even digital—believe it or not). Hiss is unacceptable. The basic philosophy of operation is that you should amplify your signal as soon as possible and as much as possible (without overloading). This brings it above the noise floor. Most mixers give a peak indicator light for the input, which is a valuable feature. I'll bet you that if you took a peek at that soundman's board, you would see his master faders and amplifier input levels maxed out, while his other faders are just hanging around the bottom and the gains on his amps are set high. What you should see is the pre-amp turned up as much as possible (distortion being the limiting factor), the faders set for a good mix (with the vocals and "upfront" instruments near the top), and the master fader set so the output VU meter is riding at 0 VU. (Just as a quick aside, a VU meter indicates relative loudness—or volume—of sound. Running at 0 on your meters simply sounds better.) Next, the amp's gain should be adjusted to get the proper acoustical level in the room. This type of setup not only eliminates hiss from the system, it also gives your master fader somewhere to go. (This is called "head-room.") Remember, once you're on 10, there is no 11 to go to.

CARE AND FEEDING

Now that you've spent a lot of money on sound reinforcement equipment, the last thing you want to do is ruin it. So, when figuring your budget, you should also consider buying road cases for everything—unless you set up and plan to stay put in one place. Accidents don't need to happen in order to jiggle loose that circuit board that was working fine on the last job. Just take a look at any good, solid road case: some time and see all of the dents and gashes it collected through "normal" handling. Imagine what would have happened to unprotected electronic equipment.

Care of your amps is also important. I recommend an amp rack, but if you can't afford one, at least put your amps in a place with proper ventilation. Don't pile things on top of any amplifier; your amp won't like it and will probably shut off if it gets too hot.

Let's go over some quick tips on the use of electricity. If something has three prongs on its electrical cord, realize that they are there for a reason. Cutting the third prong off, or plugging a three-prong plug into a two-prong extension cord will not only cause noise but is dangerous. Don't do it! Plug your system and the stage instruments into house circuits from the same circuit box. Otherwise, the next time your guitarist accidentally touches his lips against the mic' while playing, he's going to get an instant Bon Jovi hair style—or worse! Care should also be taken in running your A.C. cables. Keep them away from audio lines at all costs, since they will induce hum. If you do have to cross audio and A.C. lines, do it at a 90-degree angle. This will cut down on the hum-inducement effect.

Hopefully, you now know enough not to get taken to the cleaners when you go to the music store. Although it's a basic knowledge, it's probably enough to shovel you out from under the snowjobs of unscrupulous salesmen. If you have a small setup, you should now be able to handle it yourself. But if you have a larger setup and plan on using an engineer, what you know now might just make his life a little bit easier (which he won't mind!). Try to find an engineer who won't object to input and silly questions. You might just learn something from him, and yes, there is that slim chance that he might learn something from you. Even if you don't have any earth-shattering revelations for him, you might just gain his respect. Good luck!
This month, Rock Charts looks at Rick Allen, whose tragic accident four years ago prompted his move to an electronic drumkit. Rick has made the most of his handicap with this custom electronic setup. "Pour Some Sugar On Me," a medium-slow hard rocker, is from Def Leppard's most recent album, Hysteria (Polygram 870 298-7). The tempo of this tune allows Rick to add some funky bass drum punches. Rick's right-handed backbeat is augmented by one of four Shark pedals, triggering sounds that include an extra snare and bass drum, as well as some toms.
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"I had this little dream list of things I wanted to do and be when I grew up, and this was one of them," confides Suzanne Elmer-King. She's referring to the interview taking place in an office on Nashville's Music Row.

But the reason for this interview in the first place is that Suzanne has been diligently working at accomplishing her career dream, which is also on that list—that of being a well-respected player in the drum community.

In San Antonio, Texas, where her father was stationed in the Air Force, Suzanne began playing drums in elementary school, primarily because it wasn't common practice for a girl to take up the instrument. "They always hand a girl a clarinet or a flute, and I was very upset with the idea that I couldn't be a tuba player, a drummer, or a trumpet player," Suzanne recalls. "Probably because they tended to push girls into a category, saying, 'Girls should be playing this sort of instrument,' I decided that wasn't what I wanted to do. So I picked up a pair of drumsticks, and that's where I decided it was time to get serious about it, and I wanted that spot."

Getting serious meant playing three or four times a week in a jazz band called Caravan and spending a lot of time at home woodshedding, with most of her formative years spent concentrating on reading charts. "It wasn't until I was older and playing in nightclubs that I really began to rely on my ears. Before that, I always had a chart in front of me. I feel like I am very fortunate to have learned to read first, though, because I think if you develop your ears first and then try to learn how to read, your ears still take over. For me, I think it's been a blessing to have both, and I really think I've gotten a lot more work because there is quite a variety of work I can do."

Accustomed to being a big fish in a small pond, Suzanne became completely overwhelmed by North Texas State. "Here I was, 17 years old, 5'3", saying, 'I want to audition for the lab bands.' It sort of shook some folks up," she laughs. "Even today, there are just not a great deal of women out there competing. The trouble is that I don't see it as being something so out of the ordinary, although other people don't see it that way. It's part of me; it's what I do. I realize when I talk to other people that, to most people, being a musician is an alternative lifestyle, and being a woman adds to that. I don't think women in any profession are free from discrimination in some form. I've had a lot of people along the way say, 'Look, if you're going to do this, you're going to have to become a little hard and aggressive.' Sometimes it's hard knowing where to draw that line between being aggressive and strong about it, and not being overly so. I think the only thing that has been discouraging to any degree at all is the fact that a woman constantly has to overcome preconceptions. I simply cannot walk into a room and play, as a drummer. There is always a special awareness. I've learned to use that to my advantage as well, because I know if I had a good day and I'm in a line of 30 guys, my good day is going to be remembered forever. My bad day is going to be remembered forever too, but if I'm on, I have an advantage to the degree that I don't blend in and get lost in the shuffle. But you simply don't get a second chance if you have a bad day."

Were they not receptive to her at North Texas? "Yes and no," she answers. "The problems I had there were basically from the fact that I had gone there with the understanding that this is the world I'm about to be competing in, and that simply was not the case. I also expected to come in and study with the folks I had read and heard so much about, but wound up with a lot of teacher's aides. I was in a department of about 200 students, and there were three other women in the percussion department who all came from my high school. The other two women were primarily mallet players. It's not that we were ignored as much as there were just too many people, and we just got lost in the shuffle. So, although it wasn't what I expected, I think in retrospect I would still do it again the same way, because it caused me to take a good hard look and say, 'Okay, this is the world I'm about to be competing in. I've got to get my stuff together.'"

"So I locked myself up in a practice room for two years, and away I went. I also learned from other folks that were in the building. I'd go by and hear somebody playing a lick, and I'd say, 'Show me how to do that.' Gregg Bissonette was a good buddy, and he would sit me down and say, 'Okay, here's this Latin thing. Try this.' A lot of it was just getting in and pulling out charts and reading stuff, trying to learn how to apply what I felt came naturally to what
King

was on the piece of paper—trying to find somewhere in between as opposed to simply reading a chart.

"Actually, I think I derived more from just listening to the radio than anything else. I've always considered myself what I call an FM player. I never had tremendous chops and licks, but I always felt I was exactly what someone would need to play just what would be required for a record—someone who could listen and know when to play and when not to.

"There are people whose work I truly respect, like Steve Gadd and Jeff Porcaro," Suzanne continues. "In Nashville, someone I've grown to respect tremendously is Larrie Londin. It's hard to find someone you would want to emulate, but he has a lot of the qualities I truly respect, not only as a player, but as a businessman. I think that's half the battle. One of the reasons I left North Texas was that I saw so many musicians who were tremendous players, but they were getting out of school not knowing where to find a job—and if they found one, not knowing how to keep it. Then, if they kept the job, they wouldn't know what to do with their money. I thought, 'This is just not a lifestyle I'm willing to live.' I went back to Washington and went to business school as an accounting major for about a year and a half. I was playing the whole time in clubs, doing a lot of original music and new wave stuff. I was always kind of thinking, 'What's wrong with this picture?' My folks would come out to hear me in these horrible dives, and I would be this little clean-cut kid who, when I walked through the door, no one quite knew why I was there. But I had a blast."

During the summers while Suzanne was in school, she worked at theme parks such as King's Dominion in Richmond, Virginia. Through that, she enjoyed the opportunity of doing several USO tours, the first time traveling to Europe for eight weeks, and the second time touring the Orient with a funk band out of D.C. with Miss Black America.

Suzanne never intended on making Nashville her home, but in 1981, while working with a Top-40 band, she spotted a sign for Opryland auditions. "I dragged in a kick, a snare, a hi-hat, a ride cymbal, and a pair of sticks, sat down and read an audition, and they offered me a job on the spot. At the time, I didn't know anything about country music. I think I knew 'Rocky Top' when I moved to town, and that was it." Suzanne laughs. "I came to Nashville for the summer, working in a '60s show, went back to Washington in the fall to work and go to school, and came back the following summer and worked a '50s show at the park. At this point, I started to meet a lot of folks here in town, and at the time, there was a show at Opryland that the Nashville Network was doing called "Opryland On Stage." I was playing percussion and a handful of drumset things on that show, and taped 30 or 35 shows. So I was beginning to do some TV and pick up some jingles and that kind of stuff, and I began to take a good look at what I wanted to do. I decided that I really would like to move to Nashville, and discovered there was a school here in town called Belmont that offered a music business program. I was able to combine all my music credits from North Texas and all my business credits from Washington and get out of school earlier."

The smattering of recording Suzanne was doing came fairly easy to her. "When I was in junior high school, I had a band director who would put out a 45 every year with the jazz band, so I had some experience very early on," she explains. "A lot of my experience at the theme parks was working in a pit show where everything was tracked. They put up a wall of charts, and it was me and a keyboard player. All the tracks were done in New York with the Brecker Brothers, so it was all very professional. The only instruments they used live were keyboards and drums, because the difference of the live attack of the drums and cymbals can really be felt. So I would sit in the pit and play this 45-minute production show with a click track. The first show I did was Hurray For Hollywood, which was a movie revue, and then I did a show called New York, which was a revue of Broadway plays. I subbed for a bunch of things, too. Playing with a click track and with a pair of headphones on was something I was always very adept at. "Very early on I started studying," she continues, "my teacher, Dave Palamar, simply would not let me play without a metronome. It doesn't matter how many notes you play if you can't play them when they're supposed to be played. Because I played with a metronome early on, a click track was a very natural thing for me to play with. I think they're a great blessing. A lot of players don't like to play with them, but I think it takes the heat off. You don't have to think about time. I don't ever feel like I have to fight with it. Even now, I use a lot of drum machines on stage. Even if I'm not playing with the drum machine that's piped into the house, I'll program a click on some tunes and play with it. Louise [Mandrell] does a number of dance numbers on stage where it's imperative for her to know a tune is not going to rush or drag. There's no question about the time with the machine, yet it's not like setting a drum machine to play the tune, where it's very stilted. You
still have a very natural feel in and around perfect time."

While she was going to school at Belmont College and doing work at the Nashville Network and at Opryland, Suzanne was working on her career goals. "Every night I would hit a club and sit in," she recalls. "I learned to play country music at a place called Gabes—the nastiest, funkiest little bar in town. It is Country Music 101: 'Here's a shuffle in G; let's go.' I sat in all around town, and I began to meet a bunch of people who were outside of the circles of Opryland. Opryland brings so many players to town, yet it's really viewed as a second-class place for musicians to be. There seem to be a handful of niches in town, and if you're part of Opryland, it's very difficult to be a part of the recording community or the television community or the road community. They seem to be very separate entities, but if you look around town and see who the people are in the studio or on the road, you'll see a vast majority of them started there. It certainly afforded me the opportunity of going to school and working the clubs while I had a real job with a paycheck that was not going to bounce.

"But I finally had to make the decision not to go back to Opryland for the summer. I felt like if I was going to try to move on, I had to make a very clear, decisive break, and if I couldn't swim, I needed to be doing something else. I had inquired about a number of gigs in town, but I couldn't get people to call me back to let me know about the audition. It's not that I was the subject of any particular prejudice, but it's simply a given in town that there are a handful of folks who have gained some sort of credibility, and if you're not on that list, you can forget it. So I realized that since having the artist connection was crucial to trying to move onto the next phase, I had to leave the park. I had to get out of the clubs, and I had to get associated with an artist in order to gain any credibility. It is truly amazing, the respect that is generated between the day before you have a job and the day after. And today I could lose that job and still be in the same situation I was in two years ago. It's really a strange phenomenon. It's not your playing or your business savvy or any of that that is the bottom line, but you are greatly judged by who you are associated with."

Suzanne has been associated with Louise Mandrell for the past two years. "I was working down in Florida with two sisters from Nashville, and they told me that Louise Mandrell was looking for a drummer. They gave me the phone number of her road manager, Rick King, and I called him up, introduced myself, and said I was interested in the job. He said, That's great, and I'd love to hear you, but I hired someone two days ago.' So I said I was working in a club in the [Printers] Alley here in town and asked him to come down in case the job opened up again in the future. He came in the next night with the rest of the band, and the night after that, half the Mandrell group showed up. So there was some amount of interest on their part. Rick and I became friends, and to make a very long story short, we were married three years later.

"I still didn't have a job with the Mandrell organization, but I had been doing all this other stuff in town. In the meantime, I had met R.C. Bannon, Louise's husband, who does some production projects and demos, and I did some work for him. The drummer left, and I asked to audition, but at that time, Louise simply refused because Rick and I were married, and she felt it could be a problem on the road. When Barbara got off the road, Louise ended up hiring her drummer, Randy Wright, to come to work for her. About a year and a half after that, Randy went back on the road with Barbara, and Louise was on her way to Las Vegas to spend seven weeks at the Las Vegas Hilton. She was not taking her band, but only one of her back-up singers, and Rick to conduct the orchestra. While I was working with Jim Ed Brown in town, I had gone out to Las Vegas to visit Rick for a few days before they started the engagement. The house drummer out there was a fabulous bebop player, but simply wasn't experienced at playing contemporary country music. It was the day before they were to open the show in Las Vegas when Louise and R.C. pulled me in and asked me if I would open the show the next day. I said, 'Sure, no problem.' We had one hour..."
rehearsal with the orchestra before we opened the show the next day, and that was my initiation into working in Las Vegas and with Louise all at once. You just have to jump in the seat and go in a situation like that."

For Louise's show, which Suzanne describes as "an incredible value of entertainment," the drummer needs to consider a variety of things. "When we're doing her music live, I'm trying to cop whatever was done on the record," she explains. "I embellish somewhat, but I pretty much keep it to the record, because that's what people come to hear. When it comes to any kind of specialty stuff like dance tunes, that brings me back more into the style of a show drummer. For instance, we'll do a dance number out of The Best Little Whorehouse In Texas, and two of the guys who play in the band come out and do a dance number with her, and I'm supporting not only what the band is doing musically, but also the choreography. I'm offering punches and visually supporting what they're doing out front, and in the context of a country band, trying to be very true to a more conservative playing style," she says, adding, however, that much of Louise's music is in the pop vein.

Does Suzanne feel she utilizes her extensive training for this gig? "I use it every day," is the reply. "The Las Vegas stuff is mostly where I see it come into play. If I didn't read or if I never had experience in a traditional environment with trained players, my vocabulary and the way I would approach music would be very different from someone who had just come out of the club scene and relied on their ears. I love to do the Vegas stuff; that's one thing I might not be able to find with another Nash-ville-based act. Louise offers that type of work, and I really enjoy that with the big orchestra, a big band, and a big stage. When I'm playing just with the band, I tend to listen primarily to bass and guitar and some keyboard stuff, if it's more rhythm-oriented. When we're playing with an orchestra, I tend to listen to the horns a lot, to punch what they do, and I know how to get out of the way of strings or other stuff. I have to play a lot less in some instances with an orchestra, in order to leave the musicians room, yet I have to know how to support them a little differently. It's not a drastic difference, just an awareness that there are a lot more people on stage. You have to tune your ears a little differently."

"I think one of the hardest lessons for me to learn has been that you can be very eager to impress and show everything you can do all the time, but that's not what being a player is about. I'm here to simply do what the job requires and to do that the very best I can, no matter what that gig requires, to throw my ego out the window, and to truly be there for what I'm hired to do.

"To be honest, country is one of the more difficult styles to play, because drummers spend an entire lifetime learning to play lots of notes and lots of licks, and the nature of drummers in general is to want to let loose and play. Yet, the very bottom line, and what I feel I'm there for, is to support the music, because without a very strong foundation, it simply isn't going to happen. What I do very well is give people a place to build, and country music offers a situation where I can do that. It's not necessarily the only thing I would like to play, but I don't view it as being easy. Knowing how to get out of the way and how to say something very subtly is more difficult to learn sometimes than how to shout. And when you have fewer notes, every one counts, and you don't throw them away. If you've got three fills in a tune you'd better make sure those three say something."

Suzanne is now employing a combination of electronics and acoustics to do the job. 'I use an acoustic kick, an acoustic snare, and ddrum toms. I was using a ddrum kick for a while, but I was having trouble with the consistency from our monitor system. Having the acoustic kick and snare gave me the power, even if everything else was flaky. In addition, I use a couple of drum machines. I was using a Yamaha RX11 Multipad to a Roland 727 percussion machine, and I just recently got an RX5 and kind of combined the two. So I use both of the other machines at home now. The opener we're doing now is programmed. It was taken from a chicken commercial called This Girl Can Cook,' and it's basically to show Louise playing different instruments. I have a lot of congas and bongos and support stuff programmed on the RX5, and I play along with that. At one point she even trades a few bars on some pads and cymbals with me. On another tune, called 'I Wanna Say Yes,' Larrie had put down two different drum tracks that simply required two players or a drum machine and a drummer, so I program one track and play the other. In other cases, I'll just program the click with a rimshot and cabasa going that will only be in my monitor, and I'll play to that. This job has afforded me the opportunity to really develop what I consider to be a sound I am very proud of. I can begin to establish my own niche and be competitive."

Suzanne says she would also like to do more recording work in town, as well as more tour-oriented album support work. "There are certainly lots of other things I'd like to do, and I'm at a point now where I'm saying, 'Okay, where do I go from here?' I've been able to achieve a lot of things I wanted to. I think you have to sit down throughout your life and make your own lists. The things that sounded so out of reach ten years ago, I think, 'Well, that wasn't so tough. Now where do I go?" One of my greatest dreams of all time is to be playing Red Rocks in Denver with James Taylor. Those are pipe dreams, though," she laughs, almost apologetically. But then again, so was this interview once, wasn't it?
The Yellowjackets' drummer William Kennedy scores high in the modern jazz element. Contrary to the "laws" of the music business, the band was becoming less commercial, yet selling more records. Once again, the combined smarts paid off. "It has a lot to do with the politics," laughs William. "That's part of the reason we came up with this title.

"In order to do anything successfully in this world, you have to deal with a little bit of politics. We have a real good rapport with the record company people; they trust us. There is a boundary, of course; we can't go too far left. But they trust us and our track record enough to let us go into the studio and play what we feel. That communication with the record company and management helps. It's vital to have people who believe in you and who are willing to put your music out there."

Of course, politics is only so much tongue-wagging if the politician doesn't deliver. In William's case, however, he delivers the goods. Just listen to "Sightseeing," from the Jackets' previous album, Four Comers. Starting off tight and crisp with a bad funk feel, William then skillfully shifts the accents and alters textures, making the song sections seamless. As the tune progresses, he loosens up the drum parts in a jazzier mode around his established grooves, then stretches further, helping to climax Russell Ferrante's keyboard solo. Or listen to his very different approach on the ethereal "Past Ports," featuring his subtle, light, airy use of the set and his quick, sensitive cymbal riding. Pick up Politics and hear how he burns it up on tunes like "Tortoise & The Hare" and "Oz." Take note of "Downtown," on which he creates a hybrid feel combining a bebop ride and a funk backbeat, and also lend an ear to the nasty, no-nonsense funk grooves that he lays down under the jagged bebop head of "Foreign Correspondent."

It's obvious that the Yellowjackets are smart politicians, because in William they have chosen the ideal running mate. The Jackets—Russell Ferrante on keyboards, Jimmy Haslip on five-string bass, and Marc Russo on saxophones—needed a replacement for drummer Ricky Lawson in late 1986, when Lawson began working with Lionel Richie. Russo, who had played gigs with William in the San Francisco Bay area, called the young drummer and invited him to audition. Filling Lawson's shoes—those of a session star—would challenge any drummer. But the Jackets were wise enough not to merely search for a clone. "Fortunately, both the band and I were looking for a new direction in sound and style at that time," says William. "Our goal as a band is to have a unique sound that is the Yellowjackets. So all of us were searching; it wasn't a matter of, 'Okay, join us...but we already have our own thing going on.' I feel very fortunate to be in this situation, because there aren't any rules with these cats. Even from the beginning, they didn't want to put up any walls. It was just, 'Here's a song we've arranged somewhat already, but just play what you hear.' I am also fortunate to have been involved on a song-writing and coproduction level from the beginning. That's almost unheard of from a pre-existing organization. There was no sense of, 'You've got to replace Ricky.' It was just, 'This is the new Yellowjackets. We haven't forgotten the past, of course, because we still play past material. But we're playing it the way we play now.'"

Originally, Lawson's replacement was intended to be temporary. But as Lawson became more and more tied up with Richie, William took the drum seat permanently. Four Comers, the first recorded effort by the new quartet, revealed their new direction in 1987. Its release was followed by a 40-city U.S. tour, and the disc was nominated for a Grammy award in the Best Jazz Fusion Performance category. In '88, Politics was released, backed by a tour of Europe, U.S. summer festivals, and Brazil. More hard-edged and progressive than Four Comers, the album has furthered the group commercially as well as artistically.

Politics was recorded with few overdubs. Although the band takes advantage of high-tech developments, the foundation of the sound and feel remains the human interplay between four extremely empathetic musicians. Technology enhances and colors—but never controls—their music. "Our coproducer and engineer for Four Comers was expert at making the music sound like us. This is the only thing we were willing to put up any walls. It was just, 'Here's a song we've arranged somewhat already, but just play what you hear.' I am also fortunate to have been involved on a song-writing and coproduction level from the beginning. That's almost unheard of from a pre-existing organization. There was no sense of, 'You've got to replace Ricky.' It was just, 'This is the new Yellowjackets. We haven't forgotten the past, of course, because we still play past material. But we're playing it the way we play now.'"

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William Kennedy

and Politics was David Hentschel. His approach to mixing is that of a live performance," explains William.

Sequencing—which has doomed many a dance record to techno-stiffness—has been explored on the two albums in a way that complements and colors the ensemble. "The approach we used to sequencing was unique for me," says William. "It took a little getting used to. I had never really dealt with a lot of machines in live performance before. One of the things that has helped is wearing headphones—getting those sequenced parts directly into your ear instead of depending on the monitor wedges. Our approach to the machines on the sequenced songs is to have them play parts, not just a click track—to have a percussion or keyboard part so it's more like another human. When you program those parts, you can try doing it without quantizing so that it has a more natural feel, thereby making it more comfortable to play with."

One unusual example of sequencing heard on Four Comers and in live sets occurs in the tune "Out Of Town." In the opening choruses, a sequenced traditional swing hi-hat part with occasional percussion outbursts rides through the tune—not what you would expect from a high-tech sequence. At first, William plays around it. Then, little by little, he over-takes the part, easing into a looser swing feel, until the sequence pulls out altogether. The result of this human/machine combination is a quirky, fun, modern sound that boosts the high spirits of the tune. "The use of that sequenced cymbal part happened at the last minute," William says. "We didn't plan on it. We had the drum machine set up with that beat so we could remember the exact tempo when we tracked the tune. We didn't want it to get too quick, because the melody is real involved. So we recorded the machine on a track just to save it. Later on, we wanted to get a techno feeling for the beginning of the song, so we kept the track. We ended up doing two tracks of hi-hat so that we had a phasing going on between both. It modernized the sound for the first few choruses. We also used an older Linn drum machine for various strange conga and timbale sounds that we kept for techno-sound reasons.

"But for the most part, the use of electronics with our instruments comes from an acoustic concept. Russell's keyboard setup is state-of-the-art, but he's very fond of acoustic sounds, and that's how he approaches it. My approach to electronics is similar. I use them mainly as enhancement. I'm triggering from the drums, and the types of sounds I trigger from, say, a tom-tom, might be that particular tom sound altered in EQ, or maybe a Simmons-sounding patch with a lot of high end that will enhance the real tom. I use the tom itself as the tone, and the electronics to enhance the sound for modernized effects. I also have a couple of pads for some percussion samples taken directly from the album tracks.

How did this amiable, unassuming drummer acquire his smarts? Born May 9, 1960 in Oakland, California, where he still makes his home, William grew up in a jazz environment. His father, a semi-pro drummer, owned a large jazz record collection. "Monk, Basie, Duke—I was hearing that stuff even before I was born," laughs William. "Hearing that music early was a great advantage. On the other side, when I hung with buddies my own age, I heard James Brown and teenybopper music."

"To learn how to read, I took lessons with a private teacher named Bill Nawrocki. He was an old jazzer kind of cat, and he exposed me to big band charts in addition to rudimental concepts. I would pay for an hour, but we'd end up going at least two hours because we were having so much fun. Otherwise, I developed my style of playing from listening to Tony Williams, Elvin Jones, and Buddy Rich, and to many recent drummers like Vinnie Colaiuta, Dave Weckl, Tom Brechtlein, and Joel Rosenblatt."

"My brother, Hershall, was a keyboard player and wind player and was into Sly Stone and James Brown," William continues. "That was a unique funk environment to approach every group I've played in—to put accents in the right spots to make the groove that much more comfortable to lis-
sessions. That's where I got to play those things I was hearing—interpreting in my hands rather than just hearing it.” Fantasy Records Studios in Berkeley began calling William for some sessions dedicated to re-cutting rhythm tracks for re-releases of old records—including numbers by the Staple Singers. “Those were really challenging sessions,” William recalls, “because on some of the older tracks, the time was flailing, and I had to try to stay with it. The original drummers were most likely playing an old Gretsch set that sounded really loose. I had to try to put a modern track over it that sounded straight and in perfect time. I'm not even sure if some of those albums were ever released.”

Vocalist Bill Summers picked up the budding drummer, giving him exposure beyond the Bay Area. William played live dates with Summers, and also recorded two albums on MCA, Call It What You Want and 17. Although William doesn't see those discs as good representations of his playing (“It's teen pop”), his time with the band led to a new partnership, which earned him heaps of business smarts. Two other Summers alumni joined with him to form a Bay Area production/publishing company. "Our goal was to grab some of the talent in the Bay Area, take them into a 24-track studio to do album-quality demos, and attempt to get record deals for them. So I changed hats for a while—although I was still playing drums and doing sessions. I really liked being behind the board on a production level, but I didn't want to give up playing completely. Interestingly enough, right when I made the decision to be a drummer again, I got involved with Andy Narell, which was a great experience.”

Narell, an outstanding steel drummer, is a composer who knows exactly what he wants from drummers. Narell's instrumental tunes are founded in rhythm, borrowing from jazz, classical, pop, and ethnic music, with a generous dose of Caribbean rhythms. At age 22, William's chemistry mixed well with the interlocking grooves of Andy, bassist Keith Jones, guitarist Steve Erquiaga, and percussionist Kenneth Nash. "It was really challenging, because that band had been together for a long time," recalls William, "and Kenneth had been bouncing back and forth between drums and percussion. It was a pretty set organization, and for this young kid to come in and say 'I'm going to play drums now' was tricky. They had an interesting timing thing going on among themselves; they could play with the time and know where everyone was. I had a very solid time concept from having played with a lot of machines, so it was an adjustment for all of us. But it turned out to be educational for me. My Latin and Caribbean chops were not up to where theirs were, so I was able to build them up with that band.”

Between '82 and '84, William toured the U.S. with Narell, and also hit some major European festivals—including Montreux and the North Sea Jazz Festival. The group released Slow Motion (Hip Pocket Records) in 1985, which remains a fine example of the sparse, in-the-pocket side of William's playing. In 1987, William played on Narell's The Hammer, the first release by the new Windham Hill Jazz label.

While working with Narell, William received the call from Russo to audition for the Yellowjackets. Having been a follower of the band since their debut album, William was thrilled. The timing of the call was eerie. "At that time," recalls William, "I felt, 'I'm ready to go to a new plateau; it's time for something major to happen.' A week after making that decision, I got the call. I was really more shocked by the timing of it than by the actual call.”

The Yellowjackets gave William the opportunity he craved to incorporate all his influences and let his expression flourish. "In Andy's band, the percussion was a very strong element, so there wasn't much room for me to be active. It's just the opposite with the Yellowjackets: There's beaucoup room!" That added freedom holds true not only in playing, but also in the band's development of tunes—a process in which democracy rules. "Since I've been in the band, everyone first gets their idea for a tune together at home via a porta-studio or whatever. But because it's a band, we never say, 'Here's the chart, this is the song, and this is how it's going to be.' We leave it open. We bring in the idea, then develop it as a band. We started from a clean slate—even more so on Politics than on Four Corners. Politics was really challenging because we got to know each other a little better. At times, we even got at each other's
throats a bit—but that's part of the family thing." Tapping his writing talents as soon as he joined the band, William co-composed "Mile High" and "Indigo" (included on cassette and CD only) for Four Corners, and "Downtown" and "Foreign Correspondent" for Politics.

On stage, democracy remains the policy, as each member listens intently to the other, acting and reacting, allowing each instrument to have its fair say. William sits erect behind the drums, his torso seemingly locked into the center of his own groove, while his limbs, like independent antennae, search out and react to every nuance surrounding him. His groove interaction with Jimmy Haslip's passionate bass lines is especially interesting to hear and observe. "The more you play with a bass player, the more you develop ESP," he says. "It works well both live and in the studio with Jimmy. I find that he might leave a hole just when I was thinking about doing a fill, and I might find myself playing straight-ahead through an area where there should have been a fill in order for him to do a fill. It happens [snaps his fingers] automatically, and that's the way it has to be. I just know where Jimmy is going to be. Actually, on stage I concentrate mainly on listening to Russell. He's an inspiration because of the kinds of chords and inversions he plays. It inspires me. Jimmy is the foundation, and Russell stretches it. The emphasis, or fun part, is on being able to take it out!"

William prefers a crisp sound from his snare and cymbals, augmented with punchy toms. His choice of drums is the Yamaha Recording Custom Series with a 16 x 22 kick, 10", 12", 14", and sometimes 16" power toms, and an 8" brass snare drum. "I'm really fond of that snare; it's a beautiful drum. The brass has bright sound characteristics that I really love. It cracks and it's warm at the same time. I have a quarter of a piece of drumhead on the snare head, similar to a Zero Ring. It muffles just enough. I try not to do much muffling. If it rings out in the house, I prefer to just use gates. I like the open sound." Paiste's Sound Reflector 2000 and Sound Reflector 3000 series are William's cymbal choices because they feature an emphasis on the crisp, higher frequencies that he prefers. His sticks are Pro-Mark 5A nylon tips, and all heads are Remos. "I use the coated Pinstripes on the top and clear Black Dots on the bottom. This is an unusual combination that allows me to use no muffling at all and still get a real tonal, beefy sound. I like a high-pitched tom tuning—not as high as Tony Williams', but in that direction. The lower heads are tuned looser than the top heads so that the top is the strike tone and the bottom is a response tone. This causes a dropping tone effect." Electronic enhancement of the acoustic set is triggered by Barcus-Berry pickups into a Roland PM 16 and an Akai MPC 60 sampling drum machine. These signals are mixed on a Hill 16-channel board, powered by a QSC 1500 amp, and processed through an Alesis Midiverb II.

Even though William is a "lefty," his kit is set up in the traditional "righty" fashion. "As children, we sometimes think more logically than as adults," he explains. "When I was a kid I figured, The hi-hat is on the left side, so why not hit it with the left hand? That's why I never changed the set around. The other thing I discovered is that I couldn't play the James Brown 'Cold Sweat' beat with my hands crossed. [laughs] Open hands felt more comfortable. I even experienced a couple of teachers who tried to change me around—but forget about it!" William now uses the open-arm position to his advantage. One example can be seen in his drum solo feature, in which he starts off with a samba groove. Without the hindrance of crossing over, he creates some engaging patterns that involve moving the left hand fluidly and quickly between cross-stick snare, hit snare, hi-hat, and toms.

In the future, William hopes to do more clinics, out of a desire to share his drum technique knowledge with upcoming players. But even in the clinic setting, he believes, both sets of smarts must be covered. The business side, he stresses, should be consciously developed, just as a drummer works to develop playing technique. "I've seen a lot of clinics," he says, "but I haven't seen the business side expressed. I know a lot of musicians who have been screwed because they signed on the dotted line before they knew what they were doing. There are a lot of musicians who concentrate solely on their music and never try to gain any business education. That's a dis-
advantage to them. Having been involved in a publishing company and a production company, I've had to learn a little about contracts, copyrights, and such. Those are little things, but in the long run, they are important. In dealing with the Yellowjackets, I've had a chance to be exposed to media concepts—being able to share with the public what you're trying to do as a band, and dealing with management that can put you in touch with television and radio. I've come to enjoy some of this business side—even doing interviews! [laughs]

"The library is a good place to start. There are all kinds of books, such as This Business Of Music. You might have to discipline yourself to take maybe an hour a day to practice and then a half hour or so to read about the business. The trade magazines, such as Billboard, are also valuable. If you want to be successful, you have to remember that music is a business."

In their original inception, the Yellowjackets were a group of constantly free-lancing session musicians; the band itself took second priority. In the new Yellowjackets, however, the band is the prime commitment. When their schedule allows, though, the individual members still participate in other projects. Record sessions that have come William's way include Lee Ritenour's Portrait (GRP Records) and Kit Walker's Walking On The Edge Of The World (Windham Hill Jazz). He also squeezed in a tour of Japan with saxman Sadao Watanabe. The band included Russell Ferrante, Yelowjackets alumnus Robben Ford on guitar, bassist Abraham Laboriel, and percussionist Alex Acuna, who worked as guest artist on Politics and Four Corners. "To actually perform live with Alex and Abraham—who are two very strong Latin, Afro-Cuban players in addition to everything else they can do—was a great learning experience. On the Yellowjackets records, Alex is sometimes our 'ethnic consultant.' [laughs] One of the things Alex explained to me about Latin music was that it's not 'even.' He used this explanation: When you roll a perfectly round ball down a hill, it goes down evenly. That's the feeling of, say, a funk groove. But when you play Latin music, it's like rolling an egg down a hill, because it has uneven sides. When the egg rolls, parts of it are held back and parts of it lean forward—like in a montuno bass drum pattern. I really zeroed in on that concept, and it made my Latin feel that much better. Not only do you have to learn the part, but you have to learn the expression. That's the kind of thing I want to contribute to the style of music in the Yellowjackets."

In the future, William hopes to use his producing talents to give something back to the area that gave him roots. "There's a lot of talent in the Bay Area. Hopefully, as time goes on, I'll be able to create situations in which those people can get heard. Right now, I'm still busy on a production level with the Yellowjackets. I really enjoy being in the studio. When you're recording a song that you've written, it's a part of you. When you finish the product, it's like your child. When there's time, I would eventually like to do a solo project also."

When William speaks of the band, his tone of voice reveals how sincerely fortunate he feels to be a part of this special team. "It's a perfect situation for me in which to keep learning and contributing," he says. As the collective contributions of William and the other Jackets continue to lift the band to higher musical levels, the audience keeps growing. How does William explain this new popularity, which defies music business trends? Politics is really only part of the story.

"In some ways it's very baffling to us. It's the result of a lot of variables. One of them might be that the listeners out there are looking for a new alternative. And many of the people who have only followed rock want something different. Also, we combine enough different elements so that a wide variety of people can relate."

All marketing theories aside, however, as William thinks twice about it, he arrives at the simple heart of the issue. Leaning back in thought and speaking in slow, measured tones, William concludes, as if realizing it for the first time, "There's something else that has to do with our recent popularity. All of us are playing music that we truly enjoy. So we're playing from the heart, and that comes through in the music. Anybody can relate to that."
BY MUSICIANS...

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MC289
This is the first in a series of articles aimed at the development of dexterity and creativity on the timbales. You will find that the exercises contained herein can be of great help within or outside of the traditional Cuban context upon which they are based. As always, play the exercises as written, then use your imagination to diversify and expand your practice routine and repertoire.

Wherever there are two notations on the same bell space, like this:

```
\[ x \]
```

a high pitch is indicated with an "x" and a low pitch is indicated with a regular notehead. The high pitch is obtained by striking the bell close to the "heel" (the small end of the bell, where it is mounted). The low pitch is obtained by striking the bell at the mouth (open end).

When two notations appear on the large timbal space, like this:

```
\[ x \] \[ \]
```

the regular notehead is to be played open, while the "x" is to be muted by pressing into the drumhead with the stick.

Example #1 is something I like to use during piano solos.

Example #2 combines a fundamental bell rhythm that is extremely common in salsa, with the clave rhythm in the left hand. (Note: the top bell part can be played on the side of a timbal, and the lower part can be played on a woodblock.)

Example #3 combines a more syncopated salsa bell rhythm (to be played on a bell or cymbal) with a left-hand part that is based on a fundamental rhythm of the bass, conga drums, and "bombo" (bass drum). (The note in parenthesis is optional.)

Example #4 combines another very common bell part with clave and bombo. (The top bell part can be played on a cymbal, and the 2nd bell part can be played on a woodblock.)

Example #5 employs two basic bell parts and bombo, and is perhaps the most difficult exercise presented here. This feel was made popular by the great Cuban drummer Jose Luis Quintana ("Changuito"), who is currently featured with the Orquesta Los Van Van in Cuba. (Again, cymbal and woodblock can be substituted for the bell parts.)

Example #6 is based on a Cuban rhythm known as "pilon." (The bell part can be played on cymbal, and the small timbal part can be played on woodblock.)
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ON TRACK

SIMON PHILLIPS—Protocol.

Protocol is the first solo recording by Simon Phillips. It features five tracks of instrumental music, all written, arranged, and performed by Simon. On this recording, not only does Simon’s incredible drumming shine, but his considerable writing and producing abilities are demonstrated as well.

All of these compositions are strong, and are in a style very reminiscent of the type of material Simon played with Jeff Beck on the There And Back album a few years ago. By that I mean it’s rock-influenced fusion, very much in a Jan Hammer style. The tunes are very rhythmically oriented and feature a wide array of sounds. Even though Simon played all of the instruments on this recording, it doesn’t sound like it; there is a lot of excitement and a “live feel,” which you don’t always get on recordings of this nature. The sound quality of the recording is very high, and Simon’s drum sound in particular is about the best I have heard.

As for the drumming, Protocol contains all of the things you would expect from Simon Phillips and a lot more. Quite simply, his drumming here is tremendous. He combines strong groove playing with excellent technique, and he plays some very odd-sounding grooves incorporating different parts of his drumkit. Simon also has given himself a couple of extended fills here and there, and he plays a solo on the tune “V8.” These songs showcase his drumming talents well.

To receive a copy of this recording, which is available on CD only, send $11.99 plus $1.99 for postage and handling to The Human Touch Record Co., c/o Hoshino USA Inc., 1726 Winchester Road, P.O. Box 886, Bensalem, PA 19020.

—William F. Miller


For those of you who may not know, Vinnie Moore is a budding guitar-hero type whose music fits into that “classically influenced rock” category. This instrumental album features many long guitar solos, and unfortunately, there is a sameness to the music. There are a couple of embarrassing moments on this album, like the Bach rip-off “April Sky” and George Harrison’s “While My Guitar Gently Weeps.” The rest of the tunes are palatable or otherwise.

The thing that makes this album interesting to me is Joe Franco’s drumming. I’m glad Vinnie called him.

Whether or not you like this kind of music, the drumming here is a lot of fun to listen to. Joe gets a chance to stretch out a little bit, and on songs like “Prelude/Into The Future” and “Race With Destiny,” he gives us some driving double bass and a lot of inspired fills. It’s nice to hear Joe applying much of what he’s been discussing in his books and videos. “Pieces Of A Picture” has Joe playing in a more fusion-esque style than on the rest of the album. If you’re into some heavy-rock drumming with a big dose of chops—both hands and feet—then Joe’s a drummer to check out, and this album shows it.

—William F. Miller


Modern Drummer’s main focus is on the drumset, but at the heart of the drums, or any musical instrument, is rhythm. While there may not be a lot of drumset per se on this album, there is rhythm. In fact, Africa is so rich with information pertinent to drummers that I felt it certainly should be relevant to anyone who reads MD; drumset player or otherwise.

The Machete Ensemble is a group of musicians who seem interested in taking the traditions of Afro-Latin jazz and exploring new musical directions, while still remaining true to the music’s heritage. Afro-Cuban rhythms are at the base of their compositions, and yet this album is more than the traditional Latin big band jazz you might expect. The opening tune, “Un Viaje A Oriente,” shows the Machete Ensemble’s expertise in the Latin big band style (and also includes a killer timbale solo by Orestes Vilato), but from there, the album goes in different musical directions. The next track, “Shadow,” is a more contemporary tune with percussion used only to spice-up the arrangement. “Africa,” the title track, is next, and this standout piece moves in yet another direction. Percussion and vocals fill the tune, and the opening 6/8 nanigo moves into a pulsing rumba feel. As you can tell, percussion is the main constant throughout the album.

It’s clear by reading the credits above that some of the finest names in Latin percussion have contributed to this album. The playing is excellent, and there’s so much to learn by listening to these masters. “Oba Lube” and “Asesu” are compositions that, again, show the Machete Ensemble’s respect for tradition and ability to stretch the limits of Afro-Cuban jazz. I highly recommend this album for percussionists and drummers alike.

—William F. Miller


It’s nice to see (and hear) Little Feat back on the scene again. This group blends the best elements of raw Southern rock, smooth C&W, hot funk, and polished studio smarts—all spiced with a little Creole flavor just for fun—and comes up with a highly enjoyable style all their own. Drummer Richie Hayward has a good time on...
all of the tracks, alternating between laying down simple—but always tasteful and appropriate—grooves and whipping up some really cooking syncopations. Hayward's approach to "funk" is far removed from what passes for that term today. He actually works around the backbeat, rather than slamming it down on 2 and 4 while the bass gets busy. Listen to "Hate To Lose Your Lovin'" and "One Clear Moment" for prime examples—along with some of the tastiest hi-hat work done by anybody, anywhere, in a long time. The concept here is one of happy, cohesive looseness (as opposed, say, to the metric precision funk of Dave Garibaldi in his Tower of Power days). Hayward's funk is something that makes you want to smile and bounce, rather than sweat and jerk. (And his snare drum sound is something that must be heard to be believed. Credit is given on the liner notes to Select Snare Drums; this is something to check out!) "Cajun Queen" offers us a bayou-style country "train" feel, and Hayward nails it. "Listen To Your Heart" and "Business As Usual" are expressive tunes somewhat Toto-esque in nature; both give Richie a chance to work melodically with his cymbals and toms. "Let It Roll" is a high-energy swing with lots of drive and plenty of kicks. "Long Time Till I Get Over You" is a straight-ahead rocker with a nasty groove, while "Changin' Luck" rocks hard, yet still allows Richie another opportunity for exceptionally nice hi-hat work. (Kudos to the engineer for the drum and cymbal mix throughout this album!) Sam Clayton adds tasteful percussion on several tracks, notably on "Voices On The Wind."

There aren’t too many drummers—or groups, for that matter—recording today who have an undisputably unique sound. Richie Hayward and Little Feat both exhibit that refreshing characteristic. There’s a lot to be learned from Richie’s playing on this record; don’t miss it!

—Rick Van Horn


This album is notable primarily for the lack of heavy chops display on Steve Smith’s part. This is definitely a band outing, and Steve applies his unquestionably awesome talents to providing the best drumming possible for each song. Although we do get substantial tastes of Steve’s technical prowess on a number of the tunes, it’s his ability to lay down a solid groove—and be innovative and exciting at the same time—that is most impressive here. “Please Don’t Feel Bad” is backbeat city, with nary a major fill anywhere. But boy, does it cook! “The Chant,” on the other hand, is a percussive jamboree, combining the talents of Lenny Castro, Andy Narell, and Steve Smith to create a percussion ensemble that offers a happy combination of electric jazz and Afro/Caribbean sounds. "The Maltese Connection" puts Steve back into a groove set in concrete—and yet over which he manages to insert some tasty hi-hat licks and drum fills. Both the title tune and "Whenever You're Ready" are classic Vital Information: syncopated, grooving, melodic,
and thoroughly enjoyable. Side two opens with "Babaluwaiye (The Creator)," a brief bass and percussion tour de force that serves as an intro to the driving "Sunday Afternoon." This is followed by "The Perfect Date," a fiery tune that alternates between syncopated funk and cool bebop, and displays Steve's soloing abilities and versatility at their most outstanding. And if you've ever wondered how brushes could fit into the context of electric, backbeat-oriented music, check out "50/50."

Steve Smith has been cited by MD's readership as the best all-around drummer for the past two years. This album serves to demonstrate how such an accomplished drummer can demonstrate his skills and still be everything required of a drummer in a band. Enjoy!

—Rick Van Horn

LOLLY COLE & THE COMMOTIONS—Mainstream. Capitol C1-90893. Stephen Irving: dr. L. Cole: voc., gtr. N. Clark: gtr. L. Donegan: bs. My Bag / From The Hip/ 29/Mainstream / Jennifer She Said / Mr. Malcontent/ Sean Penn Blues / Big Snake / Hey Rusty/ These Days. Lloyd Cole & The Commotions' first two albums, Rattlesnakes and Easy Pieces, garnered much critical praise for singer/songwriter Cole's sharp, evocative lyrics, memorable hooks and melodies, and world-weary vocal delivery. Sadly underappreciated, however, has been his band, the Commotions, whose taste and restrained chops have certainly been a major factor in their success.

Drummer Stephen Irving is given plenty to work with on Mainstream. The arrangements are never stagnant—the songs move and dynamics is a main concern—and the instrumentation is often sparse, allowing

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Irving’s parts more status than mere timekeeping. Rather than simply following the changes within the songs, Irving’s parts instigate them. This is a drummer who listens not only to what’s going on around him, but what is coming around the corner.

Think of the Commotions as trying to find some stylistic midpoint between Bob Dylan, Lou Reed, and Steely Dan, and you may get an idea of where they’re coming from, and what a drummer in this band has to deal with. Irving covers Mainstream’s stylistic dips and curves with grace, though, from the raucous backbeats of “My Bag” and “Mr. Malcontent,” to the cross-stick of “From The Hip,” to the jazzy fills and ghost strokes of “29” (probably not the kind of sensitivity you’d expect from an ex-boxer, if we can believe the press kit). Perhaps Irving’s biggest challenge is providing a strong yet not overbearing pulse to songs that often feature acoustic guitars and Cole’s squeezed-out lyrics up front in the mix. That he can retain his own voice and add tasteful accompaniment to these subtleties is an accomplishment indeed. Keep your ears open for him.

—Adam Budofsky


Etta James, the big bawdy mama of R&B, is one of those soul singers who proves that this style of music can be as relevant and powerful today as it was back in the early ’60s, when Etta was “reigning soul queen” at Chess Records. For Seven Year Itch, Etta has assembled some ace R&B studio players, including Muscle Shoals Rhythm Section members Barry Beckett (who produced most of the record) and drummer Roger Hawkins. Etta’s music is nothing if not flat out sexy; all her songs deal with that “itch,” so to speak, and it is the rhythm section’s job to relate that feeling through simple, slinky, soulful rhythms. Hawkins and (on three cuts) Ricky Fataar accomplish the feat admirably. "Restrain" is the operative word here: Etta’s drummers hold her from flying off the handle, but hold on loosely, and that tension that makes the feel on this album so nice.

Hawkins is a long-time veteran of this kind of playing, and as usual, he proves that what you don’t play is at least as important as what you do. Hawkins particularly shines on "Jump Into My Fire" and "Shakey Ground," where his tasty cymbal work really keeps the funk rolling. Ricky Fataar is no lightweight himself, and on the cuts "Breakin’ Up Somebody’s Home" and "How Strong Is A Woman," his deceptively simple 8th-note rock beats are exactly what’s required for the songs—lay down a groove for Etta, and let her do the rest. Fataar also coproduced the tracks he played on, including the burning "Come To Mama.

Seven Year Itch is hardly an exercise in a passe musical style; the producers have gone for a completely modern sound (the sound quality is fantastic, and even a Fairlight III was used), but without resorting to any kind of sequencing or goofy modern sounds. This is straight R & B, but R & B for 7988. Drummers Hawkins and Fataar, and the rest of the musicians here, prove that this kind of grooving, played this well, never goes out of style.

—Adam Budofsky

continued on next page

In 1985, Tony Williams resumed his solo recording career after a five-year absence. The first two albums he put out, Foreign Intrigue and Civilization, were showcases for his compositions, but the thing that seemed lacking was his signature style of drumming. The tunes all tended to have similar tempos and feels, and Tony seemed to be concentrating on giving support rather than kicking butt. It's not that there was anything wrong with the drumming, it's just that...well, as Bill Bruford puts it elsewhere in this issue of MD, when you've achieved the stature that Williams has, people expect to hear some "hot shit on the drums." The drumming was tasteful and it swung, but somehow there wasn't much of that "Tony Williams stuff," if you know what I mean.

I'm happy to report that this new release is full of "Tony Williams stuff." He has continued to develop as a composer, and the tunes are interesting throughout. This time, however, there are a variety of tempos and feels, giving him more of a chance to display different aspects of his drumming. There are even three short drum solos ("Touch Me," "Kiss Me," "Thrill Me") that evoke memories of some Max Roach's drum compositions.

With the previous two albums, I wondered if perhaps Williams was intentionally subduing his drumming in order to emphasize his composing. With this album, I'm guessing that he feels secure enough about the tunes to let them stand on their own while he concentrates on the drums and plays them as only he can. Whatever the reason, the result is an album that showcases a great drummer and a fine composer.

—Rick Mattingly


Whereas Peter Erskine's previous solo album, Transition, gave him the chance to demonstrate a number of different sides of his playing, Motion Poet is more focussed. Six of the nine tunes feature sizable horn sections, causing Erskine to pull in his own reins a bit and concentrate more on defining the time and holding the band together. It is something he does well, having cut his musical teeth in the big bands of Stan Kenton and Maynard Ferguson. But because of his considerable experience with smaller, freer groups, he also knows how to keep things loose. The result here is a nice balance wherein Erskine provides a clean, unambiguous groove as a framework while allowing his drumming to "dance" around inside it.

Another significant feature of Erskine's drumming is that, over the years, he has merged a variety of influences into his own style. It's hard to point to any specific tune on this album and say, "That's straight-ahead..."
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bebop drumming," or "That's an authentic samba pattern," or "That's a funk beat." Instead, all of those elements come into play in greater or lesser degrees at given times.

If Erskine plans to pursue his solo recording career, his challenge is going to be to achieve some sort of signature sound, so that people will have some idea of what a Peter Erskine record represents. I call this a challenge because of the fact that Peter is comfortable in such a variety of musical settings. Having each album represent a different side of his musical personality would certainly be a valid approach, but it might not serve to build a dedicated following. He might be better off finding a setting for his solo albums that enable him to exploit those aspects of his playing that are most uniquely his, and letting his other associations (i.e., Bass Desires, John Abercrombie Trio, Bob Mintzer Big Band, etc.) serve to document various other aspects of his playing. In that respect, the "combo with small horn section" approach that is used on most of this album could be ideal for his solo projects, as it seems to combine all of the strengths that Erskine has gained from his different associations over the years. It is also a different kind of sound; it's not quite a traditional big band, but it's not a small group, either. Rather, it's a unique setting for a unique drummer, and they serve each other well.

—Rick Mattingly


How many times have we heard someone advise young drummers to absorb as many influences as possible, and then combine them into something unique? That's what Michael Shrieve has done over the years, from his Latin-based drumming with Santana (which always had a little Elvin Jones slant to it) to his more avant-garde work with artists such as Klaus Schulze and Stomu Yamashta. Along the way he developed an interest in the possibilities of electronic percussion, and was one of the true pioneers in that area.

The Leaving Time finds him in the company of synthesist Steve Roach, and it's an association that works well. They are obviously kindred spirits, both having been heavily influenced by Klaus Schulze, and there is an obvious unity of purpose on this album. But there is also a nice contrast between slick technology and some very earthy drumming. Indeed, it's not uncommon these days (especially in New Age circles) for people to attempt to humanize several layers of sequenced synthesizers with overdubbed Latin percussion. (Shakers and maracas have never had it so good.) But while that type of approach leaves percussion sounding like mere sound effects, on this album the drumming is fully integrated and has a sense of power. Shrieve is credited with playing both acoustic and electronic drums, but I would be hard pressed to identify which is which, as there is nothing particularly mechanized sounding about this music.

A frequent complaint about electronics the past few years is that there has been too much emphasis on technology and not enough on music. But Shrieve and Roach were involved in electronics before it was fashionable, and as a result, they have gotten past mere technological expertise. To these guys, the electronic stuff is just another way to make music, and that's certainly what they do on this album.

—Rick Mattingly

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The single ratamacue can be used as a solo device in most styles of music, but for this article we will focus on its use in rock and/or contemporary music. The single ratamacue should be practiced until a tempo of quarter note = 120 has been achieved. Try starting out at a tempo of quarter note = 60, and gradually work your way up. The standard notation for a single ratamacue is as follows:

One way to use the single ratamacue in the context of a solo is by slightly altering the rhythmic value of some of the notes. By taking the two grace notes that precede each 16th-note triplet and changing them into two 16th notes within the triplet, we come up with this idea:

Next, we will change the sticking of the single ratamacue by using only the first half of it repeated many times. Also, try playing the second half of the sticking (repeated many times) as indicated in exercise B. This is shown as follows:

Now replace some of the snare drum notes that remain with tom-tom notes, and you will develop some very hip-sounding patterns. These are reminiscent of the types of things that Steve Gadd plays. Exercise 1 is the original pattern, and exercises 2 through 6 are variations of exercise 1 that are achieved by starting the pattern one 16th note to the left of the preceding example.

Many variations and/or permutations of the single ratamacue are made possible by reversing the sticking of the previous exercises and also by starting the patterns one 16th note to the left each time you play them. You may also accomplish variations by changing the order of snare drum and tom-tom notes, as follows:
Use all of the previous exercises as a catalyst for making up your own patterns. Practice by starting each exercise very slowly and gradually getting faster until the feel and sound of each pattern starts feeling automatic and very natural.
MORE JON FARRISS
Thanks very much for the wonderful story on Jon Farriss in the October issue of MD. I have been playing drums for five years, and Jon’s playing helped me develop during my first few years. I still can’t believe his opening statement of, “Are you really sure drummers want to read about me?” Are you kidding? I’ve been waiting for an article on Jon for a long time, and MD didn’t let me down. Learning of Jon’s talents outside the drumkit—such as songwriting and producing—made me respect him more as a musician.

Dave Wilson
Rockaway Township NJ

YES TO BOOKS AND LESSONS
While reading the October 1988 issue of MD, I noticed the article by Daniel J. Lauby in the Teachers’ Forum section. Then I asked myself the question posed by that article’s title: “Books And Lessons: Do I Really Need Them?” My answer was yes.

I am a senior in high school and have been drumming for five years. During my first year of drumming, I took lessons at a local drumshop. After about a year, I gave up the lessons—feeling that the basics would be enough. For the next few years, I marched with the school band and played in a few garage bands. All that time, I had trouble reading new music, and even more trouble making new grooves. After reading Mr. Lauby’s article, I realized that I have not grown as a drummer since I stopped taking lessons. My counting skills are weak, my improvisation abilities need help, and my drumming can stand an all-around improvement. It wasn’t hard to realize that taking lessons and reading books really do make a difference. I am going to take lessons again and enjoy every minute of it.

Todd Donaldson
Indianapolis IN

LOCKABLE HI-HAT
In response to T.B. from Allentown, NH [It’s Questionable, October ’88 MD] and his/her question about a hi-hat locking device that can be operated with the left foot, we are currently developing the exact product being asked for. We were aware of the DW505 Drop-Lock Clutch, but felt that it did not hold the cymbals closed tightly enough. As a result, a need remained for a tighter locking device.

We have received a U.S. patent for our product, and are currently searching for a manufacturer who would be willing to license or buy it. For more information, MD readers may contact Bob Turner, AIM, Convention Tower, Suite 200, 960 Penn Avenue, Pittsburgh, Pennsylvania 15222.

Roger Lee
Quarryville PA

IN PRAISE OF DRAGONS
Judging from the approximately 27 times “old Ks” are mentioned in Rick Mattingly’s review of Istanbul cymbals (May ’88 MD), I’m not the only drummer infatuated with that dry, “trashy” sound. I’m also lucky enough to own one of those older, unfinished Istanbul 20” rides Rick mentioned, and it does remind me strongly of an old K I used to love. But as Rick pointed out in his article, problems with distribution made those “first-wave” Istanbuls hard to come by, and I’ve never found any others.

However, in my search I have found some overlooked cymbals that I feel come the closest yet to the old Ks. These are the Meinl Dragon hand-hammered series. I’ve acquired quite a few of them, marked with the designations “China crash,” “China ride,” etc. They’re funky, to be sure, and a lot of players don’t like them (or are afraid of them). But, as Rick Mattingly noted, by most people’s standards today, the old Ks sound lousy, too. However, drummers who have heard my cymbals and liked them have gone out of their way to express their admiration for the Dragons’ distinctive sound, and have frequently mistaken them for (you guessed it) old Ks. Why Meinl hasn’t promoted these cymbals along with their other lines is a mystery to me (although I suspect it has something to do with an underestimation of how many drummers are looking for that unique “old K” quality).

In any case, for anyone out there preferring the powerfully rich, dark overtones of cymbals that create a cushion of sound lying under the rest of the instruments in your musical situation, I can’t recommend the Meinl Dragons highly enough.

Jim Miller
Philadelphia PA

Editor’s note: Jim Miller is a jazz drummer, with several albums with the group Revene to his credit. He was featured in the On The Move department of the August 1984 MD.
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Performers move. Mic stands don't. To capture everything happening on stage you need AKG's new MicroMic Series—rugged, miniaturized condenser microphones specially designed to move with your instruments.

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The Common Goal

by Craig Krampf

According to the American Heritage Dictionary, "record" (v) is defined as: 1. to register sound in permanent form on a record or tape. 2. to set down for preservation in a record. I think the key words here are "permanent" and "preservation." These can be scary, awesome concepts. But with the right mental attitude, these concepts can become thrilling and extremely fulfilling. This creative moment in time has the potential to last a very long time. The way I like to say it is, "Records are forever." What an incredible thought! I guess it's been the wish of every person who has ever lived to somehow leave a part of themselves on this earth that will be remembered. What a wonderful opportunity exists for musicians who are lucky enough to record.

The ideal session is one where the music is good, if not great, and where every single member of the team has focused every bit of creative energy on the common goal of making a great recording. As we all know, things aren't always ideal. And it's during those times that we need to see reality, but not give up dreaming, striving, doing the best we can, and helping others reach that goal. Few professional football teams are so focused, with such an abundance of talent, that they go undefeated throughout the season. Still, every team strives for that goal, and every real professional player always tries to do better.

"Focused" is another very important word here. But focus on the common goal can vary greatly from individual achievement. I've seen great concern with individual performance crop up mainly with inexperienced session players. I'd be lying if I said I've never seen this with seasoned pros, or haven't been guilty of it myself at times. I think a professional has a natural instinct to want to achieve the best he or she can on a given track.

Few successful musicians ever reach their success with a "That's good enough" philosophy. But, reaching that common goal is still the underlying impetus for the recording session player. As I said in the second article of this series, many times an individual's performance may not necessarily be his or her best, but may very well have a place in the totality of what's on tape. Listen, as the producer would, to everyone's performance as a whole. Does the track hold up as a complete work of art?

Quite often you can feel that the take is right while it's going down. That take's feel and emotion are more important than everyone executing their individual parts. It's a great feeling when you listen to a playback and everyone agrees that "this is the take." Sometimes it may need a few fixes, either for timing or "clams," but the take is basically great as a whole. The producer and artist, of course, have the final say as to whether this is the take or not. But the better producers welcome feedback from their musicians. Hopefully, they've assembled a crew they respect and trust, and if the musicians feel they can do better, they'll usually let them have another go at it.

Something that makes sense to me is, when you have a really good take, to see if you can beat it. Naturally you don't roll over what you've done. You've got that take; it's not going anywhere. But why not see if everyone can dig a little deeper and try to better it? Time and budget may enter into this, but if it's not a problem, why not see if you can outdo yourself? Sometimes you do; sometimes you don't! Oftentimes, the next take sounds like a copy of the original, rather than an original, but at least you find out—and usually fast.

Other musicians have it a little easier than drummers. They can sometimes fix things, or improve their takes by being put up on another track. Rarely can you fix drums. I've never heard of a live situation where the engineer and producer put the drums up on other tracks to see if the drummer could do better. In that situation, everyone has to try another take. Sometimes, even though you may feel that you didn't do your best, your opinion is vetoed. You then just have to live with the fact that that's the take for all time. Once again, try not to become too subjective. Make an effort to hear what the producer, artist, and everyone else loves about this particular performance as a whole, rather than dwelling on your particular part.

Most of the successful studio drummers I know have the "killer instinct." They know their parts can't be fixed, so they go for it, giving it all they've got and striving for perfection. You never know which will be the take, so you need to go all out just about every time.

I've heard some stories about a few successful players who go for it, but say, "You better get this quick," meaning they're not going to play the song over and over. This can be difficult, especially if you're ready but others are either still searching for their parts, or are a little uneasy about something. I just wish these guys would remember that they're there to do what the producer and artist want, without an attitude. And that means playing full out and giving 100% every time until the whole take is a "killer." Those are the moments when you need to really search deep within yourself. It can also build character if you let it. I should also mention that I've seen "attitude" catch up with people. Producers, artists, engineers, and musicians do talk, and a career can easily be damaged.

It might sound obvious, but love, pride, and enjoyment are tangible, positive feelings. I really believe you can hear those feelings on tracks. You can also hear negative emotions on records. It's not easy to remain positive when there's negativity in the studio.

This creative moment of recording can also be a fragile one for a lot of artists. We sometimes see temperamental behavior from engineers, producers, and musicians. In their striving so hard for success and greatness, their emotions are often exposed. Unfortunately, that can lead to many distractions from reaching that common goal I'm talking about. Always do your best to be understanding, supportive, and positive.

Maybe I'm crazy, but I really believe making records should be fun. It's a lot of hard work, and every session presents a new challenge. But the bottom line is, if you love what you're doing, it should be fun. The session greats I know all love to see those red lights go on, and to hear the engineer say, "We're rollin'."
"I had a choice. I wanted quality. I picked DW. I made the right choice."
**MD TRIVIA WINNERS**

Five lucky individuals had their cards chosen from among those with the correct answer to MD's August '88 Trivia Contest question. The question was: "Before he played double drums with Phil Collins in Genesis, Chester Thompson played double drums in Frank Zappa's band. Who was the other drummer?" That drummer was Ralph Humphrey.

Our five winners, each of whom will receive his choice of Evans CAD/CAM drumheads (for a five-piece drumset) are: Ralph O. Irish IV, of Utica, Michigan; Norm Banis, of Bethel Park, Pennsylvania; Roger W. Hoinacki, of Reno, Nevada; Joseph Lyons, of Jackson-ville, Alabama; and Chester Mooney, of Brewton, Alabama. Congratulations to our winners go out from Evans Drumheads and Modern Drummer.

**DAVE PATRICK TO ADVISE SELECT SNARE DRUMS**

![Bill Gibson, left, (Huey Lewis & The News) and Dave Patrick, right, sales and marketing consultant, Select Snare Drums, Ltd., outside offices in Watsonville, Ga.](image1)

![Herb (left) and Maury Brochstein, shown with their ad campaign "I GOT THE GIG.".](image2)

Bill Gibson (drummer for Huey Lewis & The News) and Johnny Craviotto, partners in the newly formed Select Snare Drums, Ltd., recently announced that Dave Patrick, a recognized percussion industry sales and marketing specialist, has joined their company as a consultant. Dave is part of a team (including Gibson, Craviotto, and Select manager Sharon Gross) that is preparing to introduce a line of custom, steam-bent solid one-piece maple and exotic wood snare drums at the 1989 NAMM Winter Market in Anaheim, California.

According to Dave Patrick, "Custom snare drums have always been a pet project for me, and the Select solid snare drum concept, design, and standard of excellence make this the most exciting project I've been associated with in years. Throughout the company, there is a powerful commitment of talent and resources, and a level of quality, service, and integrity that I find very refreshing. I feel strongly that Select will produce the type of superior American-made products that drummers have been waiting to see, and I am proud to be involved."

"We're happy to have Dave with us," commented Bill Gibson. "He is an enthusiastic team player who brings a great deal of experience from his years of work in percussion sales and marketing. With Dave rounding out our team, we look forward to a great product launch at NAMM."

Dave's past credits include 11 years as drum specialist at Strings & Things in Memphis, two years as percussion manager for Kaman Corporation, and a brief term with the Gretsch Drum Company. He and his family will be residing in the Monterey Bay area, near Santa Cruz, California.

**PRO-MARK EXPANSION REPORT**

Pro-Mark, a world leader in the design and manufacture of drumsticks, moved into its new 14,000-square-foot building recently, setting in motion plans to offer drummers the world over a product that's "better than ever," according to Pro-Mark founder and president, Herb Brochstein. Phase One of the new facility was completed on property measuring 56,000 square feet, allowing ample room for future expansion. The 31-year-old company now enjoys bright, spacious, private offices that offer "an environment more conducive to creativity and to conducting business in general," says Brochstein. Production, shipping, and warehouse areas also utilize space better, which allows for the separation of wood storage, lathes and sanding, and finishing and quality control/packaging rooms.

Along with its physical expansion, Pro-Mark has also undertaken a program of new product development and improvement. Standards have been raised, two production shifts are now working, new tooling and equipment have been purchased, and new packaging designs are being prepared, and, most importantly, new drumstick models and accessories have been added to the line. Says Brochstein, "We probably have the widest range of models and sizes of any manufacturer in the world because of the variety of wood and model sizes offered. Besides our standard wood tip and nylon tip models, we make a substantial number of custom models for the famous and not-yet-famous drummers around the world." Brochstein boasts that Pro-Mark has consistently sold more drumsticks than any other manufacturer in the world for the past ten years (and challenges any manufacturer to dispute the claim). Yet, he realizes that he cannot continue to trade only on past accomplishments. "We've got to raise our standards higher than they've ever been before," Brochstein said in a recent message to his factory and office staff. "Even though we enjoy an excellent reputation, we cannot sit back and rest on that. We've got to get better."

Like any other business, Pro-Mark faces ongoing challenges. The US dollar/Japanese yen exchange rate has resulted in increased prices for Japanese oak, the material that accounts for half of Pro-Mark's drumstick production. Although sales declined somewhat initially, according to Brochstein, "Drummers are finding that the workmanship and durability of the oak sticks are worth the increase in price. If the US dollar gets stronger against the yen, we can satisfy more people around the world with our Japanese oak sticks."
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Evans Applies “CAD/CAM” Technology To Aluminum Hoop Bass Drum Heads.

Based on the overwhelming acceptance of CAD/CAM (patent pending) snare drum and tom-tom heads, Evans has expanded their CAD/CAM line to include Bass Drum heads. In addition to the easily identifiable aluminum-alloy hoop with its high-tech gray finish and invisible internal coupler, CAD/CAM Bass Drum Heads also feature:

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For complete information on Evans Drumheads, including a 10-page, full-color catalog, send $2.00 for postage and handling along with your name and address to: Evans Products, Inc., PO Box 58, Dodge City, KS 67801.
In response to the current exchange rate, Pro-Mark has expanded its line of domestic hickory sticks, which can be sold at a lower price than the Japanese oak. Many models that were previously available only in oak are now made in hickory, as well.

Brochstein comments: "Financially, our company is strong. The fiscal year ending May 31, 1988 was the best in our history. Pro-Mark was able to survive the recent economic crisis and has ended up a stronger company. Today, the music industry is healthy again. The end result is a benefit to everyone: employees, wholesalers, retailers, and consumers."

Brochstein cites a "winning attitude" as the secret of his success. "People on the company team must share this attitude, which combines treating people fairly and making a good product—and in many instances, a superior product. With that attitude, I just don't think you could end up being a loser."

**DAVID VIA JOINS YAMAHA CORPORATION**

Previously, Via served as Administrative Manager of the Percussive Arts society (PAS). In that position, he acted as Advertising Manager for Percussive Notes magazine and as Executive Editor of its PASIC Preview Issue. He is well-known in the musical community for supervising and managing the exhibit area and registration at the Percussive Arts Society International Convention (PASIC) from 1985 through 1988.

Playing percussion since the age of ten, David Via received a B.A. in Music Business from Milikin University, Decatur, Illinois, and a Master of Music in percussion performance from Northwestern University. He has been a soloist with the Milikin-Decatur Civic Symphony and percussionist for the Chicago Civic Symphony. He has also performed as percussionist for numerous theatrical orchestras.

"We are proud to have David Via on our staff," commented Wanamaker. "His extensive background, in addition to his popularity in the music community, will be of great value in providing high-quality service to Yamaha dealers and artists."

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THE DRUMMER'S FITNESS GUIDE

Fit To Be Publishing has just released The Drummer's Fitness Guide, a total conditioning program specifically designed for the needs of every drummer. According to author Michael Johnson, the Guide is composed of over 100 pages with more than 50 safe, easy, and fully-illustrated exercises and recommendations to enhance one's health, performance, and appearance.

Says Johnson, "The Drummer's Fitness Guide addresses the need for a convenient, efficient, and safe method of balancing the physical stresses inherent in drumming, including guidelines for consistently reaching peak physical condition at the time of critical performance." For further information, contact Fit To Be Publishing, 3425 Cumnison Lane, Soquel, California 95073, (408) 462-1542.

KEPLINGER DRUMSAFE

The makers of the Keplinger Snare Shell have introduced their new Drumsafe. The product is a locking system for drumsets that allows the user to leave his or her kit set up in clubs, rehearsal studios, at home, etc., without the risk of theft.

The basic Drumsafe kit consists of 15 feet of plastic-coated steel cable, five stainless steel brackets (black), and a lock. The brackets are designed to fit under any size tension lug (one per drum). One end of the cable is made to pass through each bracket (catching all stands, pedals, etc., along the way) and to lock after the last bracket. The other end of the cable won't pull through. A seven-piece kit with 25 feet of cable is available, as are extra brackets. For more information, contact the Keplinger Drum Company, P.O. Box 31973, Seattle, Washington 98103, (206) 632-1714.

PACEMAKER II METRONOME

Ace Products is now marketing the Pacemaker II compact metronome through its national network of distributors. With a height of only 4", the unit is easily carried in a pocket or case. According to the manufacturer, the Pacemaker II is a precision instrument with unsurpassed accuracy and features an unbreakable mainspring, recessed winder key, all-metal pendulum, and a big, audible sound. A protective cover is provided for the face of the unit, which is available in ivory, ruby red, and black. For further information, contact Ace Products Enterprises, Inc., 50 South Center Street, Building 24, Orange, New Jersey 07050, (201) 674-7017.

PRO-MARK CARL PALMER MODEL STICK

Pro-Mark recently added the Carl Palmer Model to its expanding line of hickory drumsticks. Pro-Mark engineers worked closely with Carl to develop the stick, which measures 15/8" long and 19/32" (14.7 mm) in diameter. It features a relatively short taper for maximum durability and a modified acorn-shaped wood tip for excellent cymbal definition. For more information, contact Pro-Mark at 10707 Craighead Drive, Houston, Texas 77025.

ARTIST'S CHOICE CASTANET MACHINE

Richard E. Holmes, owner of Artist's Choice, recently announced the addition of a new Castanet Machine to his collection of percussion products. The instrument was designed and manufactured for Artist's Choice by Matt Furfine, and will now be available along with the company's sticks and beaters.

According to Holmes, this Castanet Machine "outclasses all others. First, two solid brass cross-pieces are bolted to a fine solid wood base. Brass screws hold the steel springs in adjustable tension and steel posts prevent all unwanted lateral movement. The 100% authentic Spanish professional wooden castanets are thus put in perfect playing position. The ingenious anchoring of the nylon cord underneath the front cross-piece allows the player the luxury of changing castanets in less than 60 seconds. This Castanet Machine is already widely distributed in Europe, and has been chosen by professional percussionists in La Scala (Milan) and the Orchestre de la Suisse Romande (Geneva), and I am proud to present it under the Artist's Choice trademark." For further information, contact Artist's Choice, 2111 Mason Green, St. Louis, Missouri 63011.

RHYTHM MACHINE VERSION 2.00

Gateway has just introduced Version 2.00 of their Rhythm Machine program for IBMs or compatibles with MPU-401 or Voyetra 4001 MIDI interface. The Rhythm Machine has been completely rewritten in the C language. This results in faster rhythmic generation, faster performance, more extensive graphics, and many other features. These new features make the program compatible with virtually any MIDI drum machine, sampler, or keyboard. It can also play a drum machine on one channel and drive an external sequencer on the same (or another) channel. The program comes with an on-disk manual, along with demo songs and patterns. For further information and detailed performance specifications, contact Gateway, 4960 Timbercrest Drive, Canfield, Ohio 44406, (216) 533-9024.

NEW SLOBEAT DRUMSTICKS

Slobeat Percussion, a division of Slobeat Musical Products, has recently introduced Rock Mauler and Advanced Funk model drumsticks. These two models are designed for players with loud/heavy drumming requirements. The sticks are made of 100% American hickory. Compared to the average stick, both new models are a little longer, with...
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NEW ADDITIONS FOR RACK PAK

Music Connection Products has just announced two new additions to the Rack Pak product line of specially designed cases for transporting drum rack systems. The Professional Series is for drummers utilizing side extensions with their racks, and will hold up to seven 49” bars. Each bar has its own protective pouch, and the case also features separate pockets for accessories. This case will fit most major rack systems.

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All Rack Pak specialty cases are made of highly durable nylon exteriors and thick, protective polyester shearing interiors, making them lightweight, durable, and waterproof. For more information, contact Music Connection Products, P.O. Box 434, Chicopee, MA 01021, (413) 594-7785.

DRUM FILMS ON VIDEO

Rhapsody Films has released several new videos, including two of special interest to drummers and percussionists. Art Blakey: The Jazz Messenger is a 78-minute film made by Dick Fontaine and Pat Hartley in 1987. It chronicles Blakey’s past and present, and includes interviews with Blakey and his contemporaries, footage of both historic and recent performances, and a variety of aspects of Blakey’s contribution to instrumental jazz and dance.

Batouka (First International Festival Of Percussion) stars Nana Vasconcelos, and showcases percussionists from all over the world. The performances took place in Guadeloupe in the Caribbean in 1986. The film, by Marc Huraux and Francois Migeat, runs 52 minutes. Videos are available in VHS format only. For further information, contact Rhapsody Films, Inc., P.O. Box 1798, New York, New York 10014, (212) 243-0152.

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Longwater Drive, Norwell, MA 02061
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Today's most innovative new snare drum sounds can be described by these three words, aluminum, aluminum and maple. And if you haven't heard of one of Pearl's new aluminum shell snare drums or the new maple shell piccolo, you could be missing out on the most exciting sounding snare drums available.

Pearl's new aluminum shell has been called the optimum snare drum shell material. Offering great tonal character and presence, the perfectly rolled 2mm aluminum shell finished in silver lacquer features unparalleled attack and a tight sound that can range from heavy, fat and full bodied to a sharp, cutting edge sound. The unique characteristics of aluminum create a sound so completely different from other shell materials it must be heard to be fully appreciated. Available in our free floating system and traditional styled Hi-Tension lugs, Pearl's new aluminum snare drums are offered in 5" and 6½" depths.

With the growing popularity of the piccolo sound with today's top players, Pearl's new maple shell free floating system piccolo offers sharp attack, quick response and the warm crisp sound of maple. Combine its beautiful liquid amber finish and die cast hoops with its sound characteristics and versatility, and you have a great snare drum.

Check out one of Pearl's newest snare drums at your local Pearl dealer...and then clear off shelf space for the snare you're using now.
How does a 360-year-old family of cymbal makers keep up with the demands of modern drummers and today's music?

At Zildjian, we listen to innovative artists like Vinnie Colaiuta and Dave Weckl. And turn their ideas into new sounds and new cymbals.

"Zildjian is really tuned in to the needs of the drummer. Their people are out in the field listening and doing research, asking drummers what they want in cymbals," says Vinnie Colaiuta, L.A. studio drummer who's played with Frank Zappa, Joni Mitchell, Gino Vannelli, Tom Scott, Chaka Khan and The Commodores.

Dave Weckl, currently with Chick Corea, explains, "I told Zildjian I wanted the perfect ride cymbal for all occasions. One that had just the right amounts of brilliance and attack, but not too pingy. Sort of a dry definition that would allow me to carry out the emotion of the music."

"So I actually worked in the Zildjian factory, experimenting with new designs. We combined "A" machine hammering and "K" hand hammering, no buffing and buffing. The result is what is now the K Custom."

"The K Custom is a nice, warm, musical ride cymbal with a clean bell sound, yet it's not too clangy. I can turn around and crash on it without having to worry about too many uncontrolled overtones. It blends perfectly," says Colaiuta.

Zildjian continues to play an instrumental role in shaping the sound of modern music—by working closely with leading-edge drummers like Vinnie and Dave.

"I'm always looking for new sounds and so is Zildjian. In fact, that's how we came up with the idea of mixing a Z bottom and K top in my Hi Hats. The K gives me the quick, thin splash characteristic I like. And the Z provides that certain edge. They really cut through," says Weckl. "Which is important because of all the electronics that I use."

"Zildjian's really hit upon a winning combination in terms of delivering new concepts. They're creating cymbals that have a musical place and make a lasting impression," claims Colaiuta.

"Zildjian is as sensitive to the needs of drummers as the drummers are towards their instruments," concludes Weckl.

If you'd like to learn more about Zildjian A, K or Z cymbals, stop by your Zildjian dealer. And discover the virtue of listening.